PPBE on VMware ESXi Servers



Installation Guide

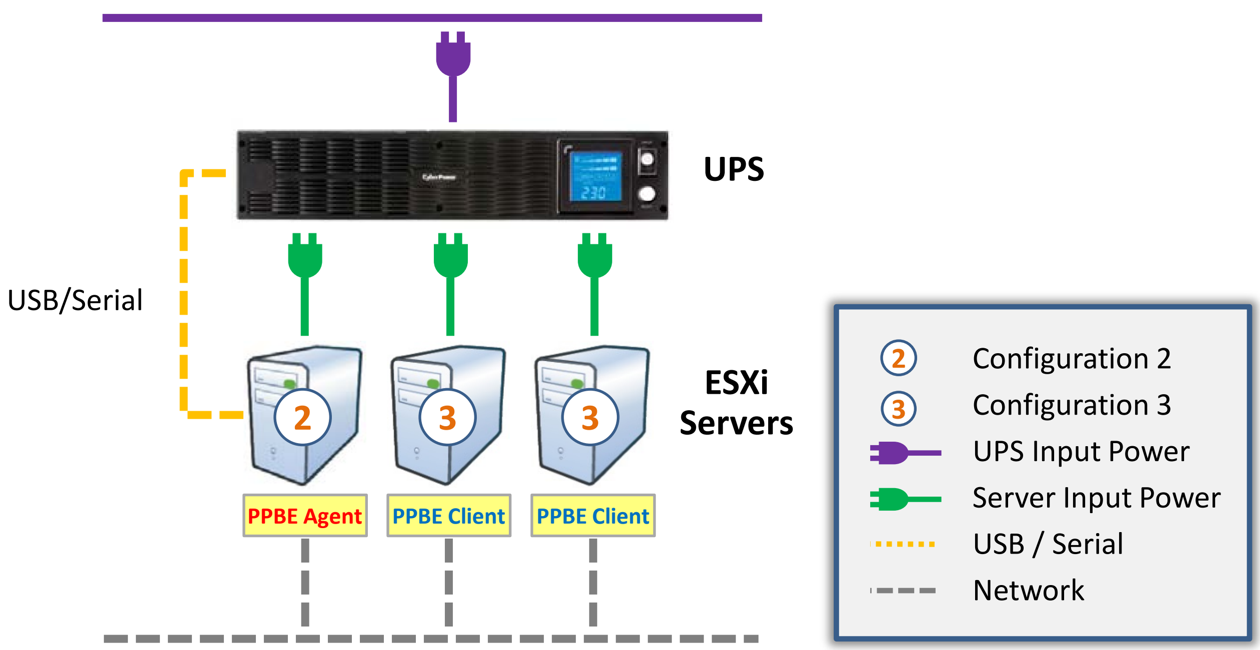
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1. APPLICABLE SCENARIOS

Scenario 1 – Without RMCARD

Scenario 1 is recommended if:

- You have a single UPS with less than 3 ESXi servers.
- Your UPS is **NOT** installed with RMCARD.
- You do not need central monitoring so you won't install PPBE Center.



PPBE Virtual Appliance (VA) Agent need to be installed in only one of the ESXi servers, the rest of the ESXi servers need to be installed with PPBE Virtual Appliance (VA) Client.

Please refer to Configuration 2 and 3 for the installation and configuration details of PPBE VA Agent and Client.

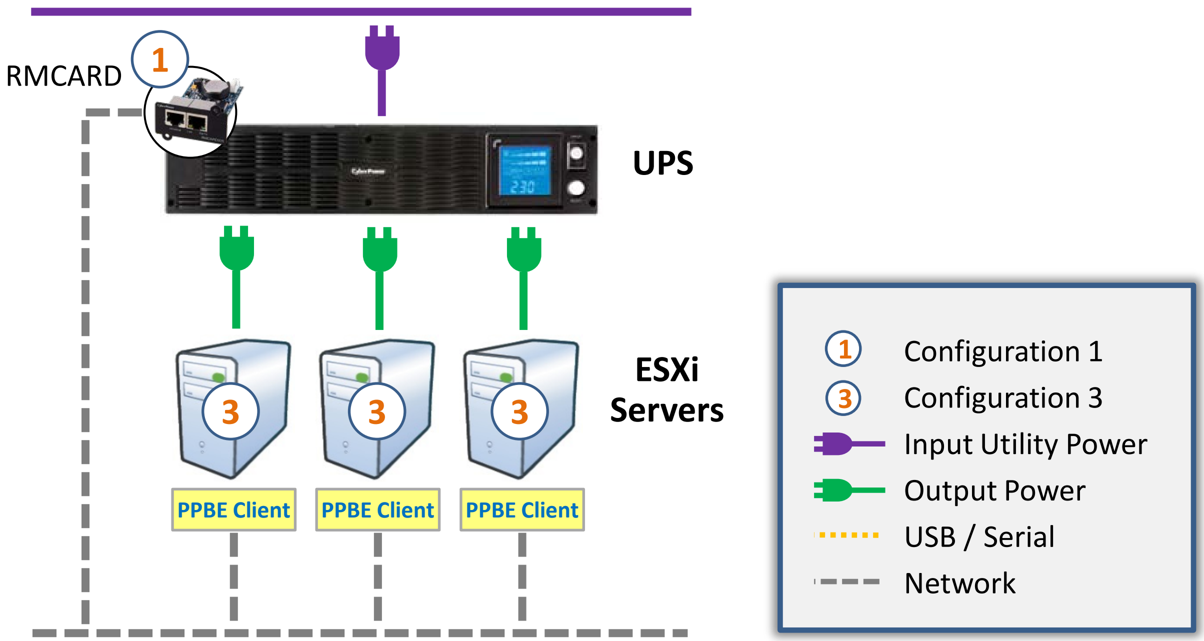
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1. APPLICABLE SCENARIOS

Scenario 2 – With RMCARD

Scenario 2 is recommended if:

- You have a single UPS with less than 3 ESXi servers.
- Your UPS is installed with RMCARD.
- You do not need central monitoring so you won't install PPBE Center.



All ESXi servers need to be installed with PPBE VA Client.

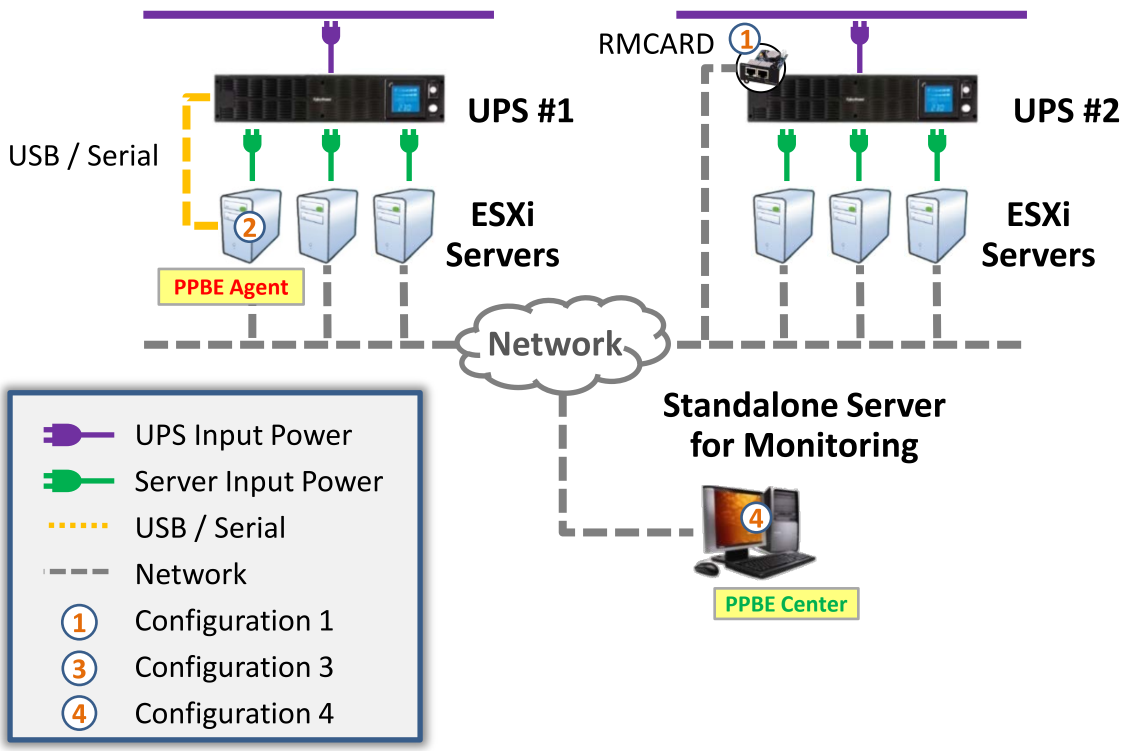
Please refer to Configuration 1 and 3 for the installation and configuration details of the RMCARD and PPBE VA Client.

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Scenario 3 – UPS (with/without RMCARD) + PPBE Center

Scenario 3 is recommended if:

- You have multiple UPSs or more than 3 ESXi servers.
- You do NOT have VMware vCenter server.
- You will install PPBE Center for central monitoring (RECOMMENDED).



- With PPBE Center, **if UPS is without RMCARD** like UPS #1, only one ESXi server needs to be installed with PPBE VA Agent, and other ESXi servers DO NOT need to be installed with PPBE Client.

- With PPBE Center, **if UPS is with RMCARD** like UPS #2, all ESXi servers DO NOT need to be installed with PPBE Client.

Please refer to Configuration 1, 3, and 4 for the installation and configuration details of the RMCARD, PPBE VA Agent, and PPBE Center.

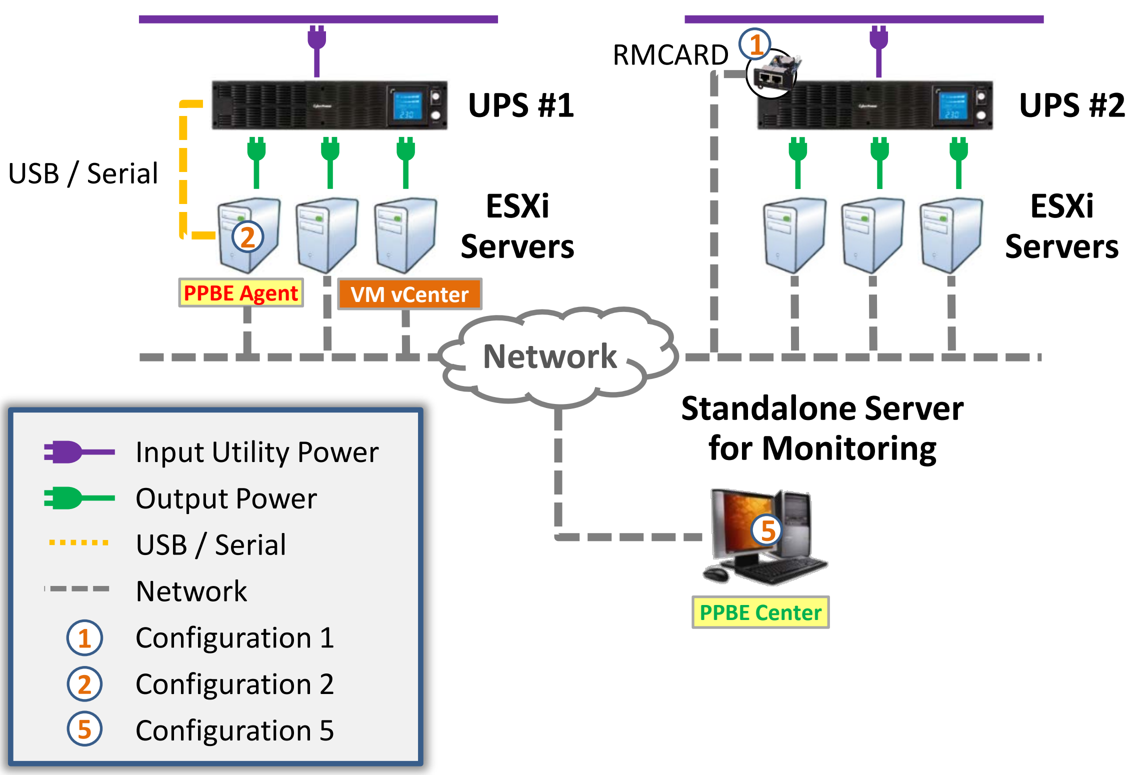
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1. APPLICABLE SCENARIOS

Scenario 4 – UPS (with/without RMCARD) + PPBE Center + VMware vCenter

Scenario 4 is recommended if:

- You have multiple UPSs or more than 3 ESXi servers.
- You have VMware vCenter server.
- You will install PPBE Center for central monitoring (RECOMMENDED).



- With PPBE Center, **if UPS is without RMCARD** like UPS #1, only one ESXi server needs to be installed with PPBE VA Agent, and other ESXi servers DO NOT need to be installed with PPBE Client.

- With PPBE Center, **if UPS is with RMCARD** like UPS #2, all ESXi servers DO NOT need to be installed with PPBE Client.

Please refer to Configuration 1, 2, and 5 for the installation and configuration details of the RMCARD, PPBE VA Agent, and PPBE Center.

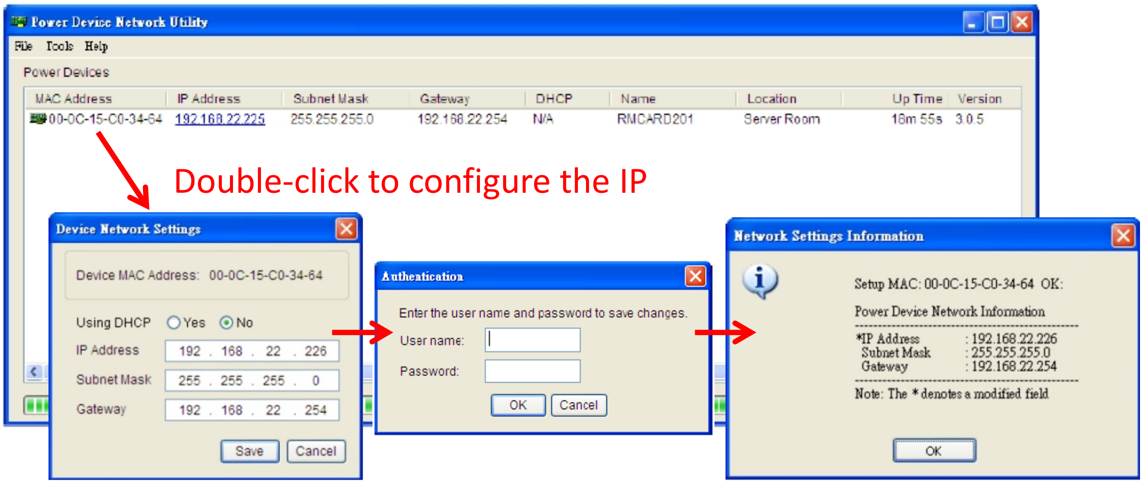
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2. Configuration 1

Install RMCARD on UPS



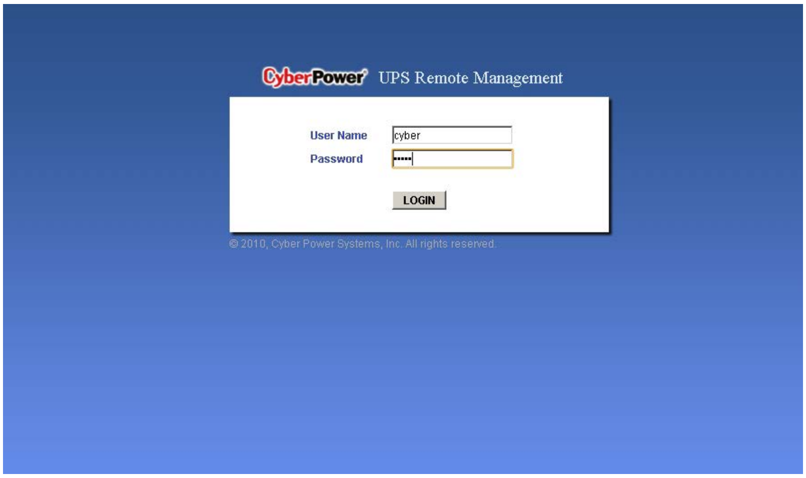
1. Download "Power Device Network Utility" tool from the official website and use it to detect RMCARD and re-assign a new IP address if necessary.
You will need to enter a username and password for authentication when you modify the IP address. Default Username/Password for authentication is **cyber/cyber**.



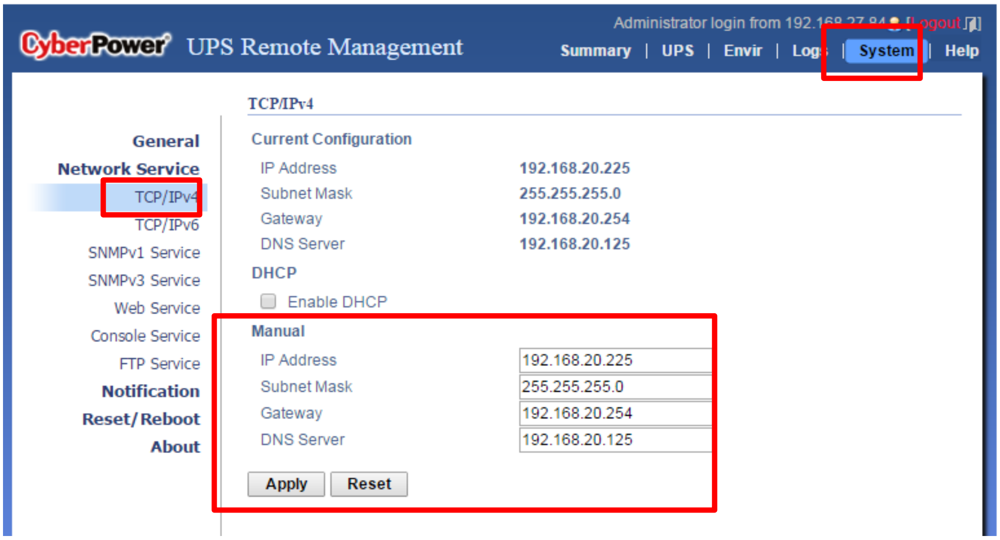
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2. Configuration 1

2. Visit web interface of RMCARD with new IP address using your preferred browser.
Default login Username/Password is **cyber**/**cyber**.



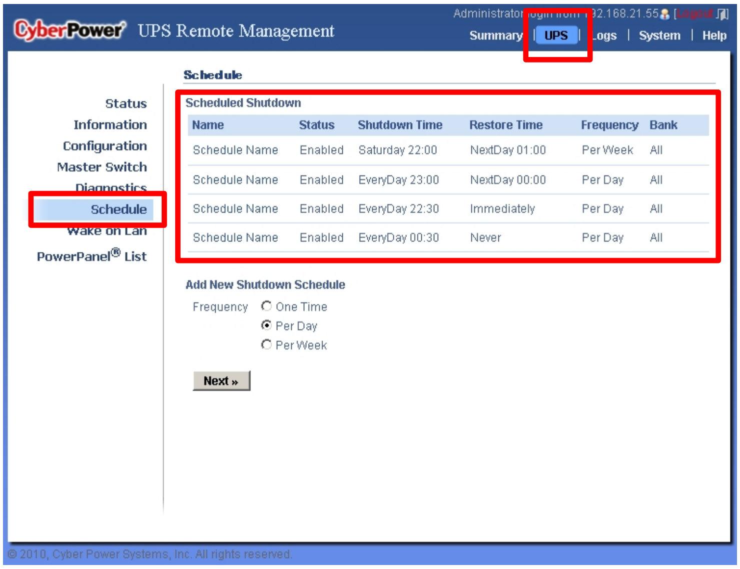
3. You can check if your new IP address is correct in web interface.
Go to **System** → **TCP/IPv4** → **Manual** section.
You can modify or re-assign another IP if it is not correct.



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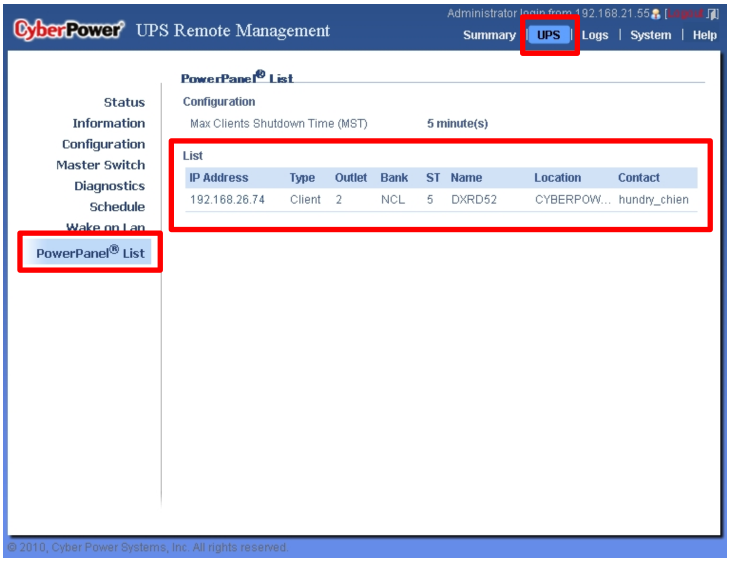
2. CONFIGURATION 1

4. You can arrange the schedule of UPS ON/OFF on below page if necessary. Go to **UPS** → **Schedule**.



5. If the PC/server with PPBE Client (and powered by this UPS) has been setup correctly, it will be displayed on **UPS** → **PowerPanel List**.

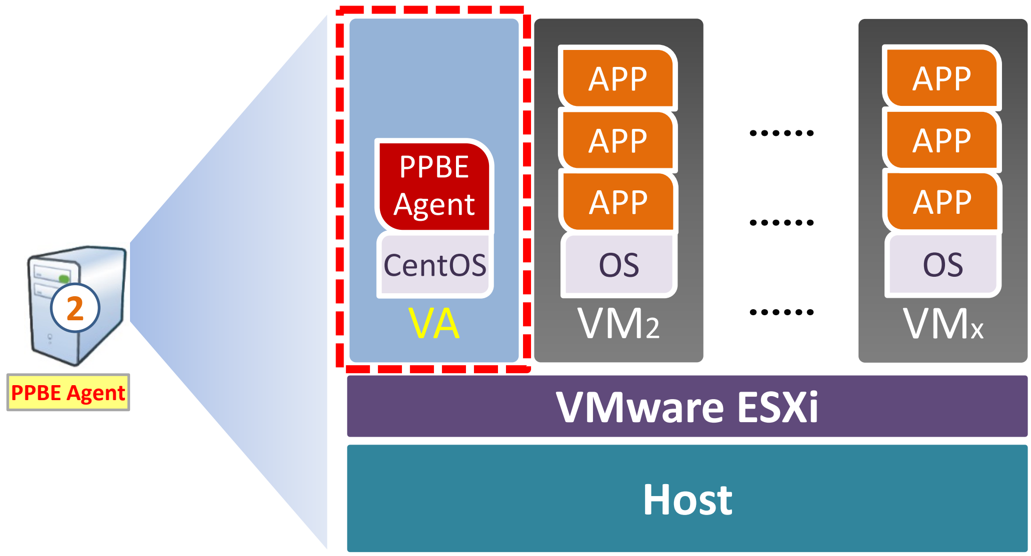
After all installation and configuration are done, you can return to check if all PCs/servers with PPBE Client are displayed on the list.



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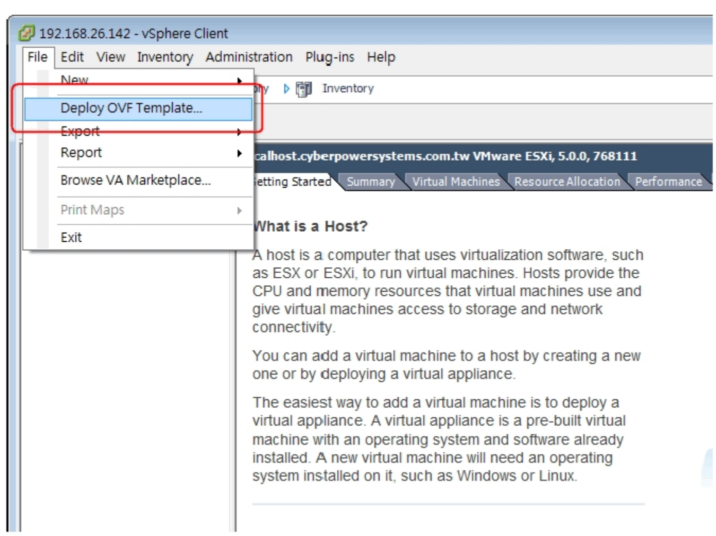
2. Configuration 2

Install PPBE VA Agent



1. Download the latest version of **PPBE Agent Virtual Appliance** from official CyberPower website.

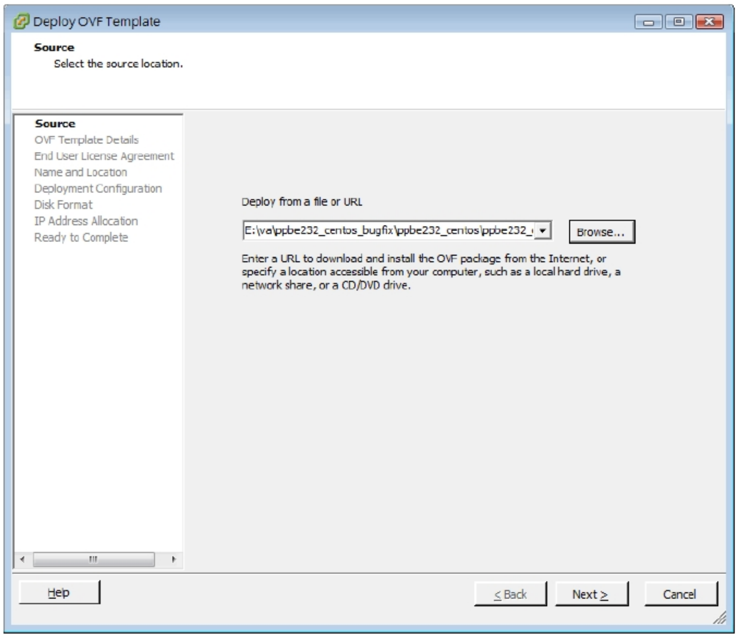
2. Launch the vShpere Client. Open the **Deploy OVF Template** window from **File** → **Deploy OVF Template...**.



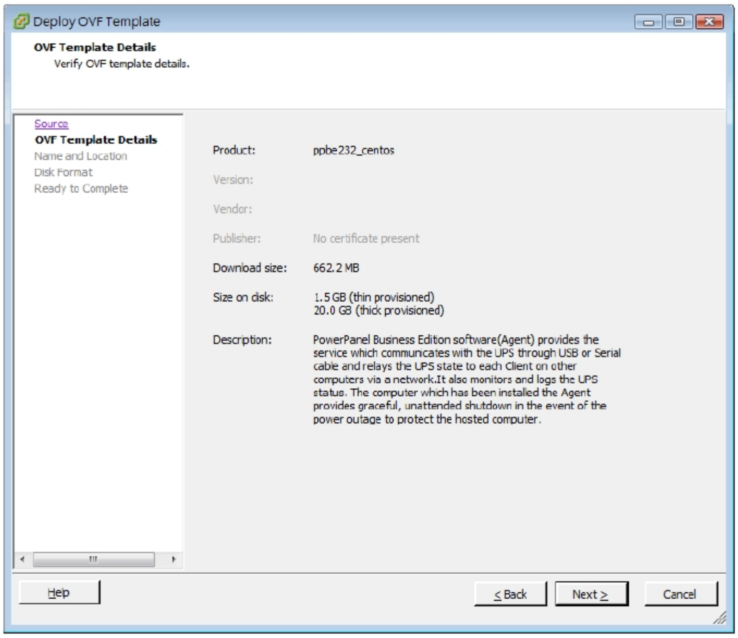
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2. CONFIGURATION 2

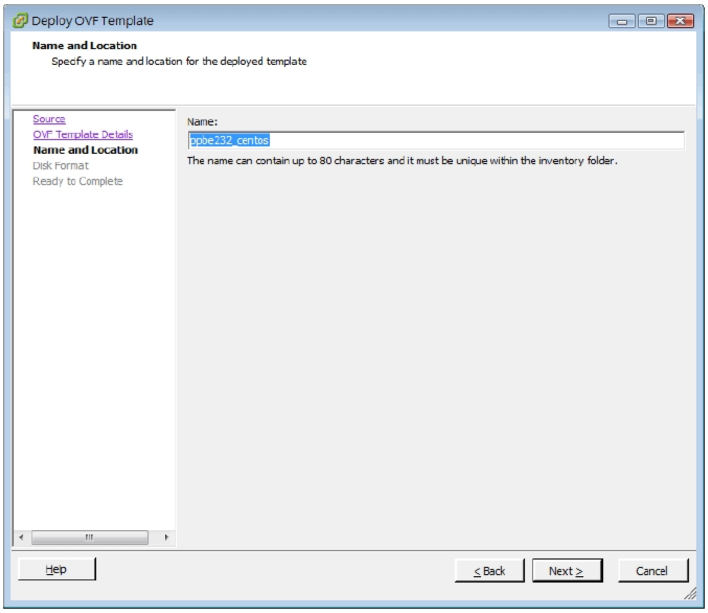
3. Click **Browse** to import the **ppbeXXX centos.ovf** extracted from the downloaded zip file. Click **Next** to start the deployment task.



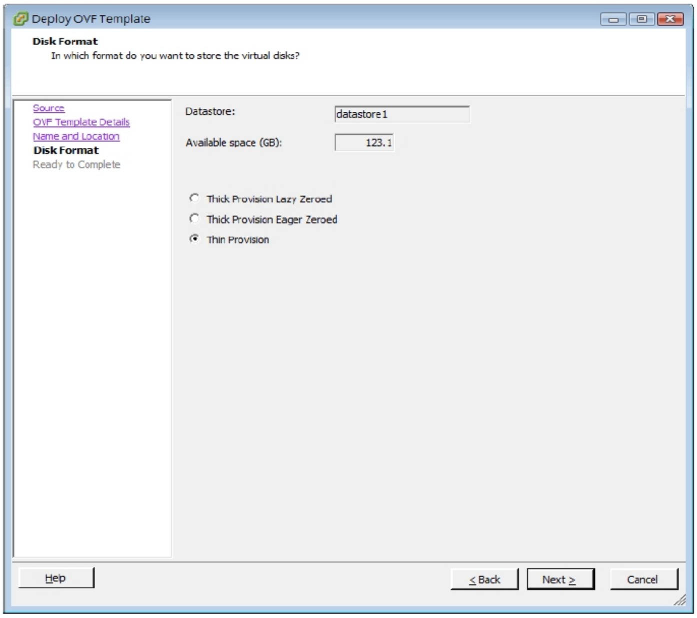
4. The OVF Template Details are displayed. Click **Next** to continue.



5. Enter a name for the deployed PPBE virtual appliance. This name should be unique within the inventory. Click **Next** to continue.

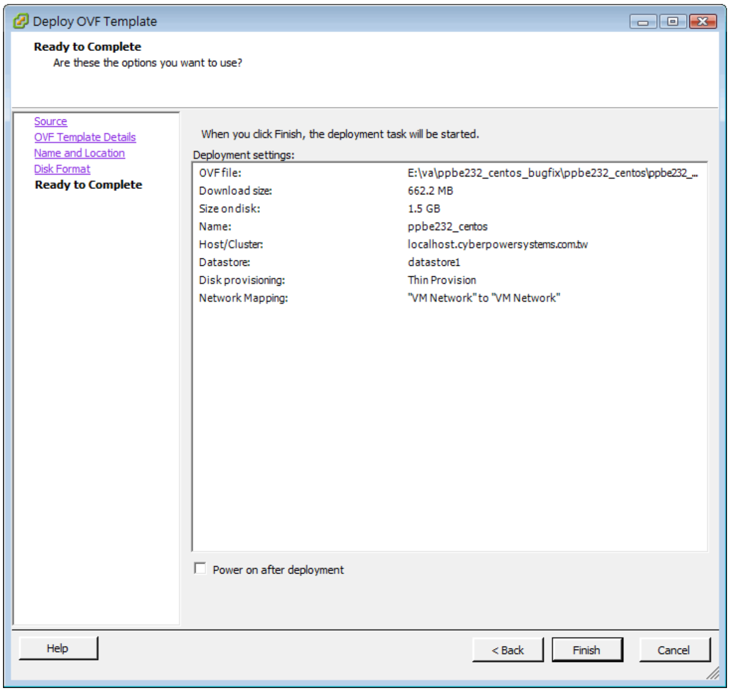


6. Select the virtual disk format for the PPBE virtual appliance. The default option is **Thin Provision**. Click **Next** to continue.

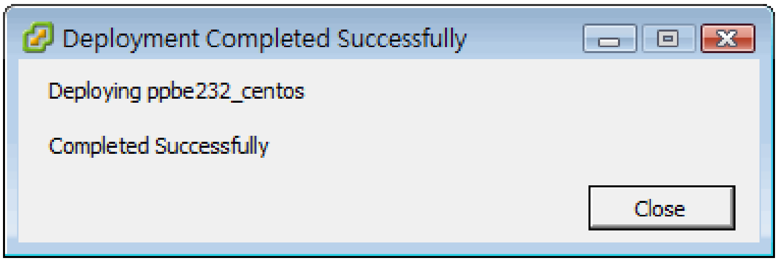


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7. The deployment details will be displayed. Click **Finish** to start the deployment task.



8. After the deployment task is completed, the PPBE virtual appliance will be added into the inventory.



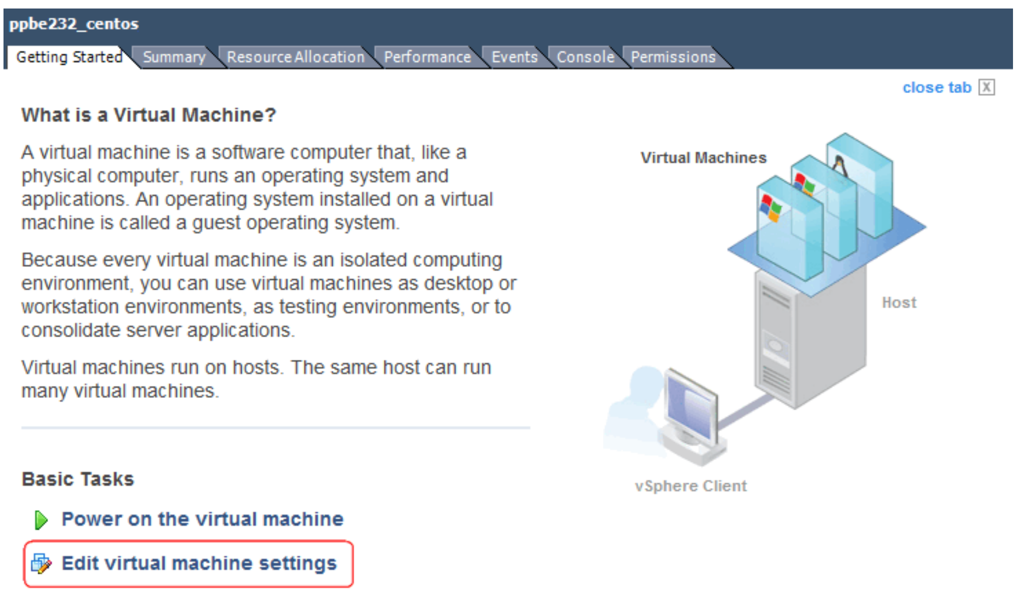
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9. Ensure the USB or serial cable connecting the Computer and UPS is properly connected.

Make sure the connection between the Agent computer and the UPS is securely connected. The Agent will not monitor the UPS status if the communication is lost.

If the Agent is installed on the virtual machine in ESX and ESXi, USB device or serial cable which connects to the UPS should be assigned to any virtual machine manually.

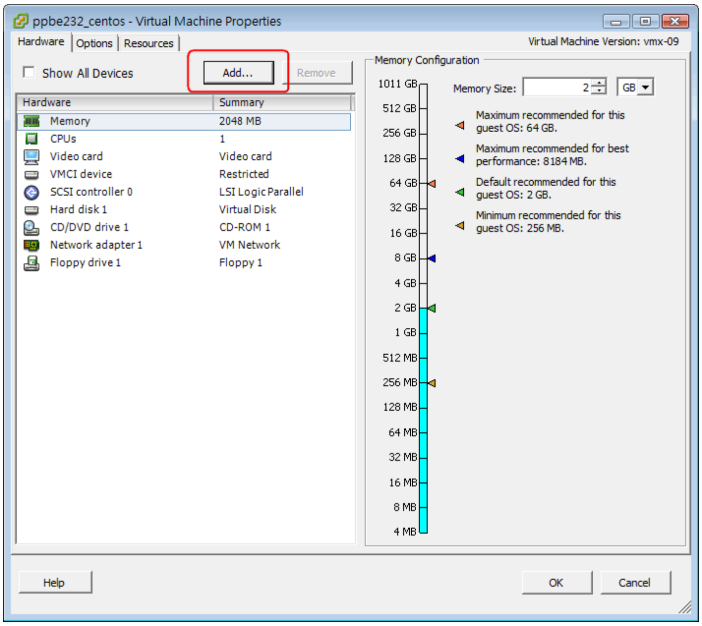
9-1. Click **Edit virtual machine settings** of the virtual machine. If the USB controller is available, go to step 9-6 to add a new USB device.



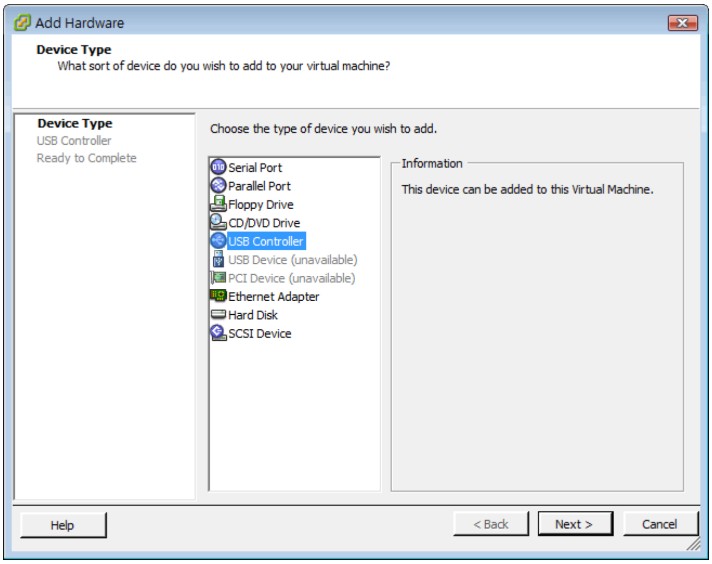
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2. Configuration 2

9-2. Click **Add** to add a new USB controller.

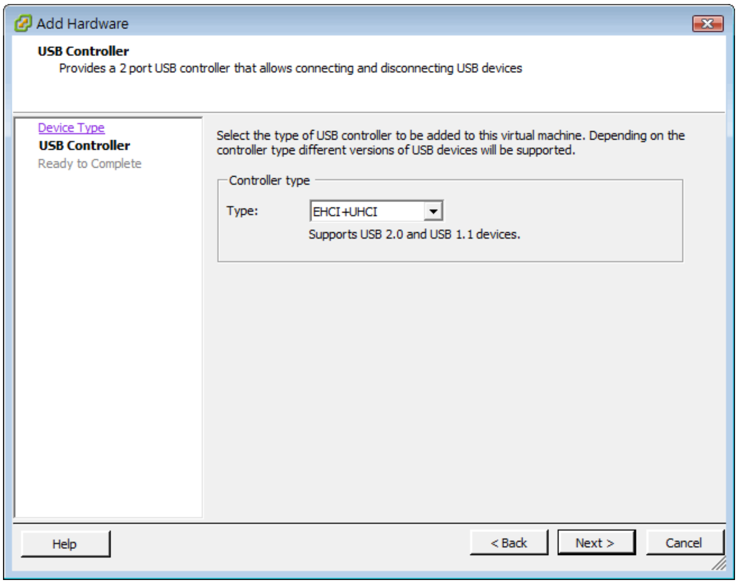


9-3. Select **USB Controller** from the list and click **Next**.

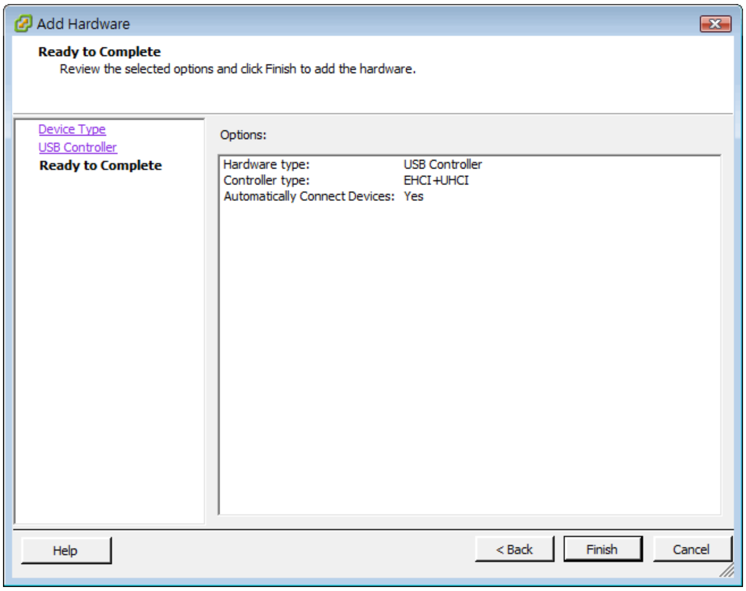


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9-4. Select USB Controller Type and click **Next**.

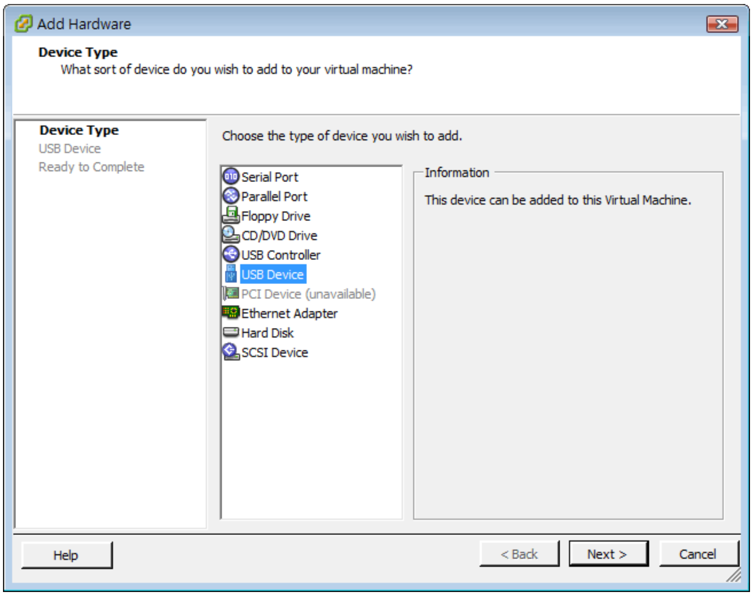


9-5. This will add a USB controller. Click **Finish** to finish.

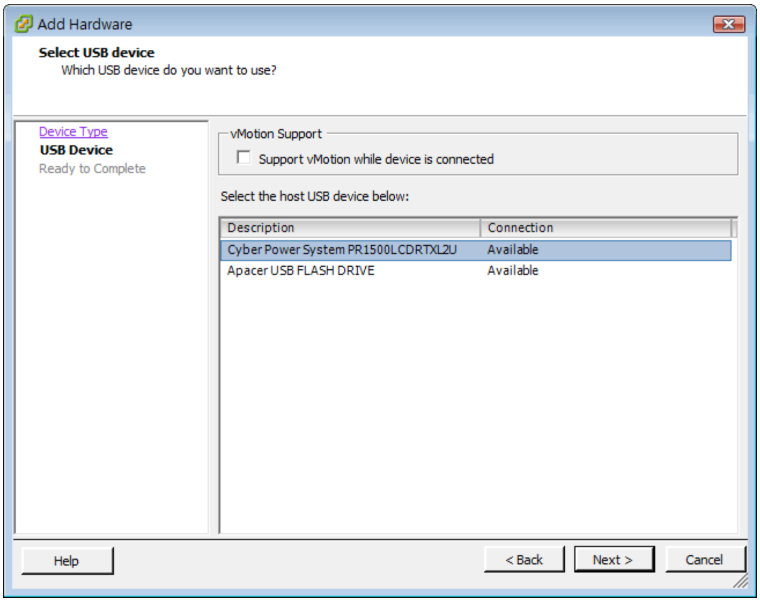


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9-6. Select **USB Device** and click **Next**.



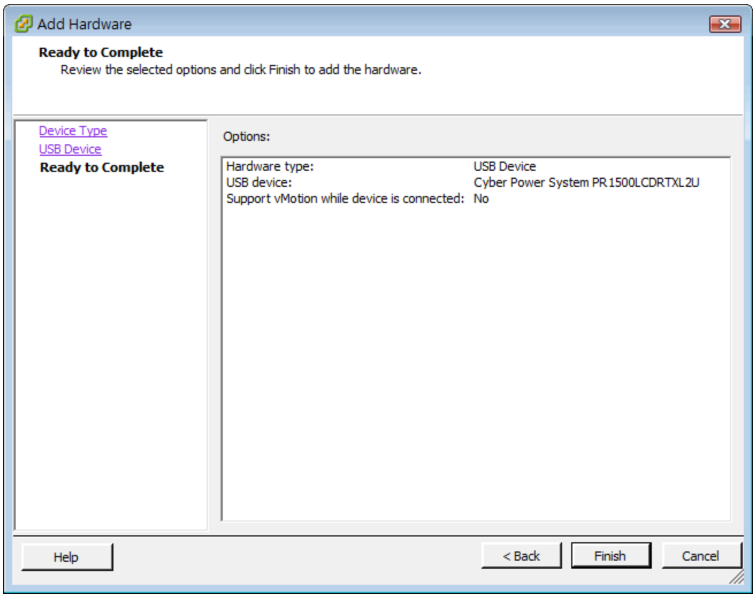
9-7. Select the host USB device which is connected to the PPBE virtual machine and click **Next**.



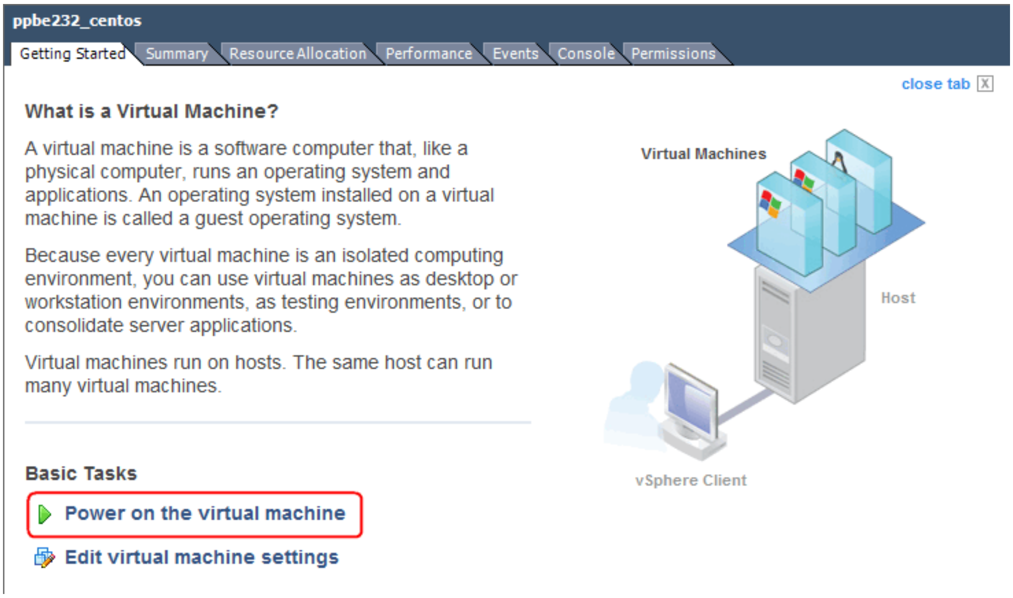
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2. Configuration 2

9-8. USB device details will be displayed. Click **Finish** to finish. This will add a new USB device.



10. Click **Power on the virtual machine** to power on the virtual machine and be ready to access the PPBE.



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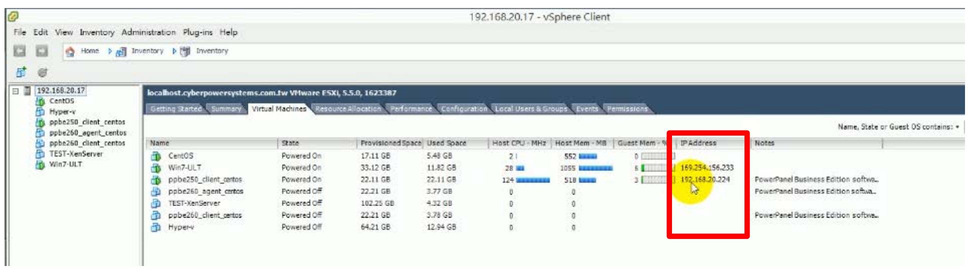
2. CONFIGURATION 2

11. Follow below steps to complete the PPBE Agent configuration.

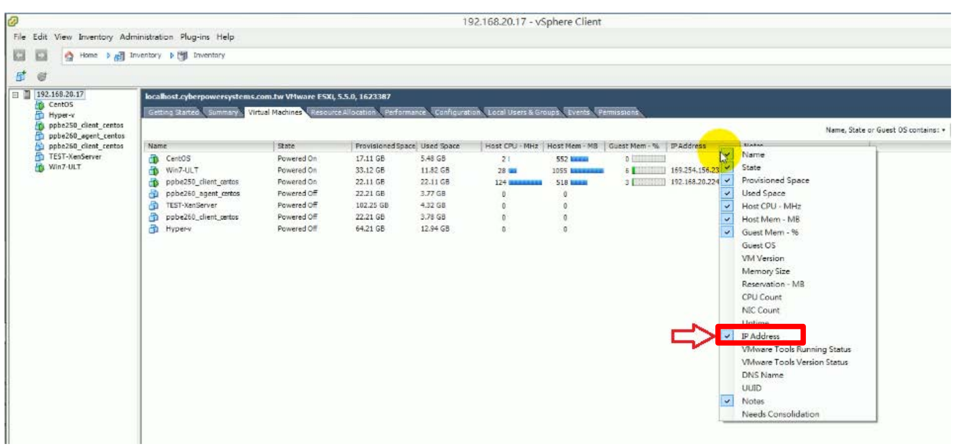
11-1. Before logging in PPBE Agent, you need to find out the IP address of the PPBE virtual appliance.

(1) Login VMware vSphere Client with IP and ID/Password of the host.

(2) In **Virtual Machines** tab, all VMs, along with their IP address, are displayed.



(3) If the IP address is not displayed, right-click to open the pop-up menu. Check **IP Address** to display the IP address.



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2. CONFIGURATION 2

11-2. Login PPBE Agent through web interface.

To finish the configuration of PPBE Agent, you have to access Agent through the web browser.

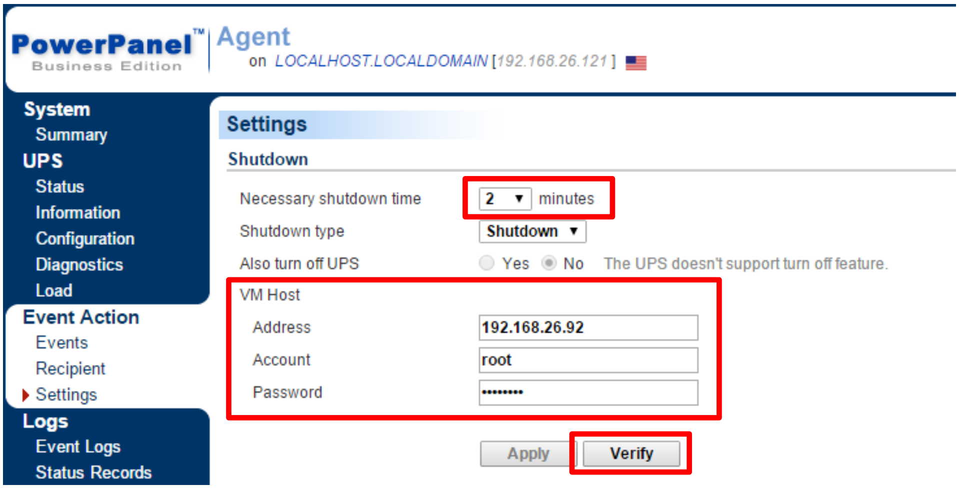
Go to http://xxx.xxx.xxx.xxx:3052 where xxx.xxx.xxx.xxx is the IP address of the VA, and login with ID/Password: **admin/admin** (default).

11-3. Configure Shutdown Action for ESXi.

In order to ensure the ESX/ESXi host and all virtual machines can be shut down correctly in case of power events, users have to configure the ESXi host address, account and password of root user for the host shutdown from the virtual machine running Agent. Enter actual user name and password for ESXi host in the Host Address, Account and Password fields on the **Event Action/Settings** page.

***Note: Host Address** is the IP address of the ESXi host computer.*

11-4. Go to **Event Action** → **Settings** to set necessary shutdown time for the ESXi host.



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2. CONFIGURATION 2

🗎 ***Note:***

***Necessary shutdown time**: Set the shutdown time for VMware ESXi host server.*

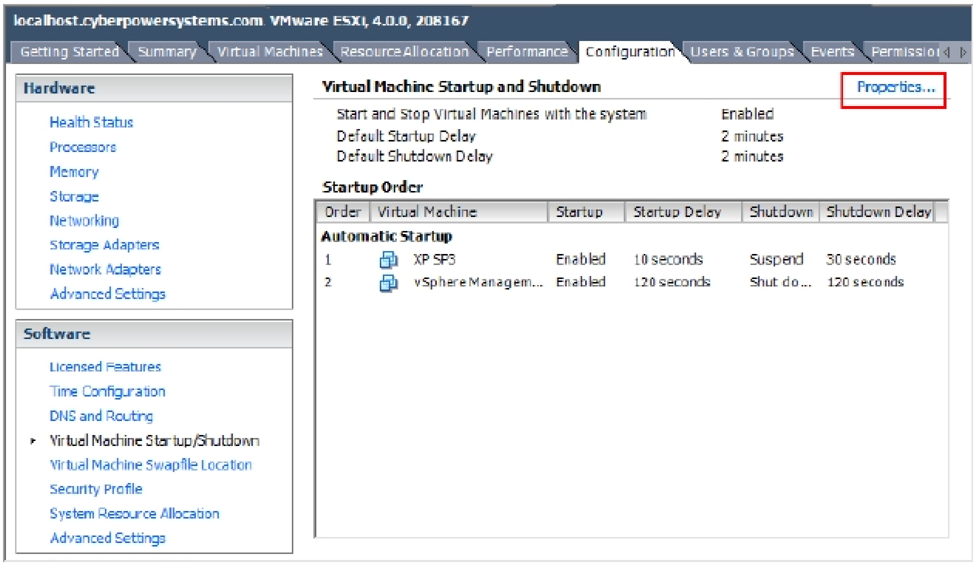
***Address**: The IP address of the host computer.*

***Account**: The ID that you use to access host via "VMware vSphere Client".*

***Password**: The password that you use to access host via "VMware vSphere Client".*

*After clicking **Apply**, you can test if the ID/Password can access the host by clicking **Verify**.*

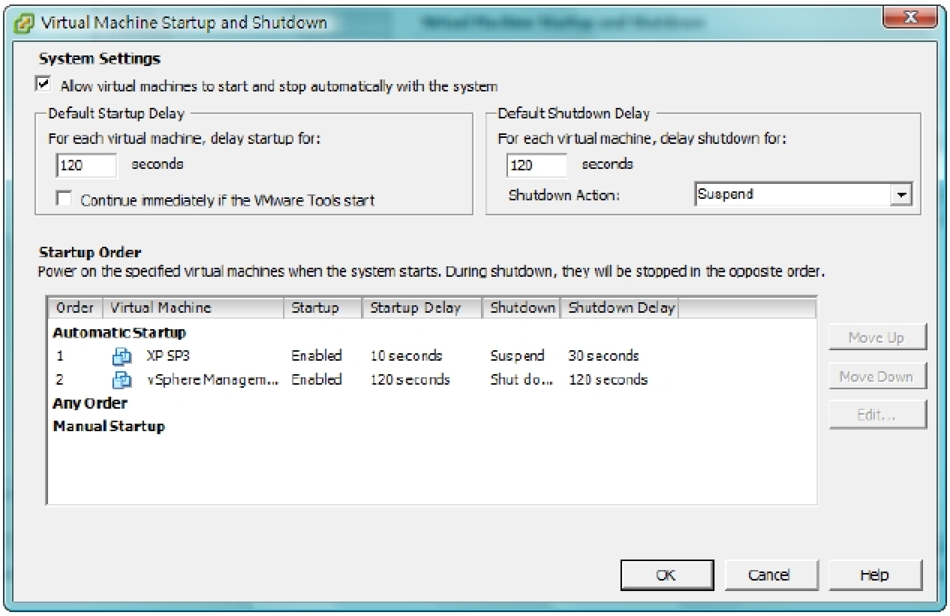
12. Configure Startup and Shutdown of Virtual Machines on ESX/ESXi.
In order to ensure that all virtual machines could be shut down and restart gracefully, check the “Virtual Machine Startup and Shutdown” setting through menu by going to **Configuration** → **Virtual Machine Startup and Shutdown** → **Properties**.



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2. CONFIGURATION 2

13. Check **Allow virtual machines to start and stop automatically with the system** to enable this option.

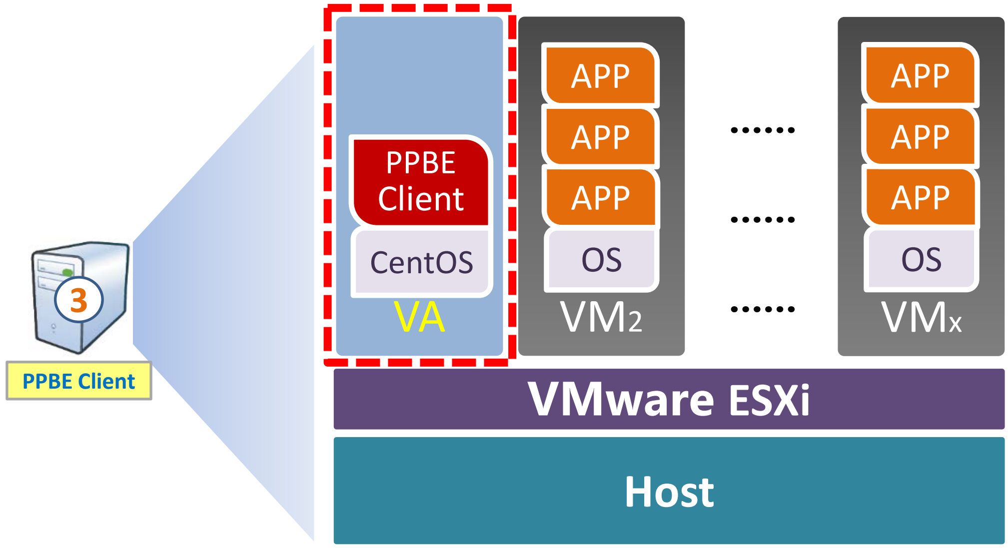


✓ **DONE!** Now you can test and see if the host can work with the UPS properly.

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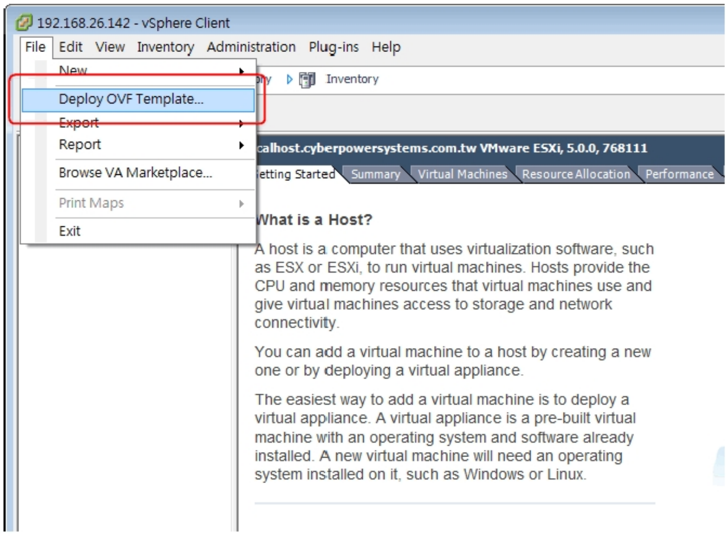
2. Configuration 3

Install PPBE VA Client



1. Download the latest version of **PPBE Client Virtual Appliance** from the official website of CyberPower.

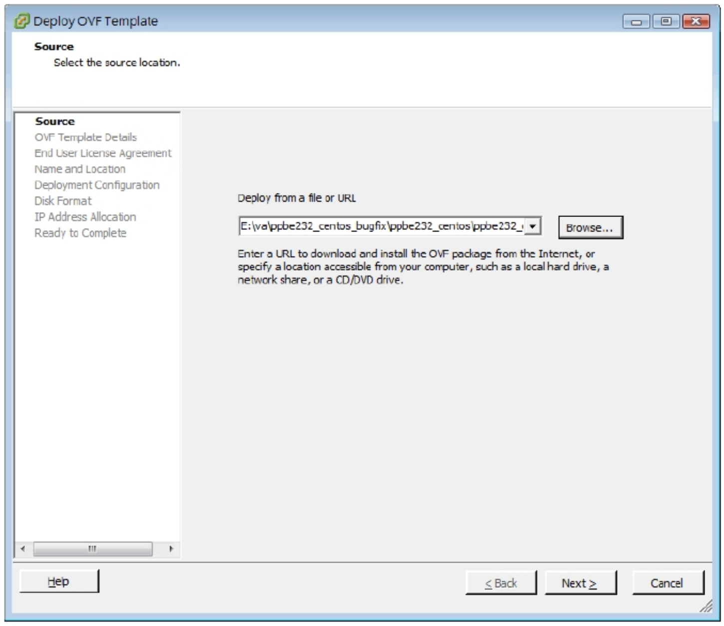
2. Launch the vShpere Client. Open the **Deploy OVF Template** window from **File** → **Deploy OVF Template…**.



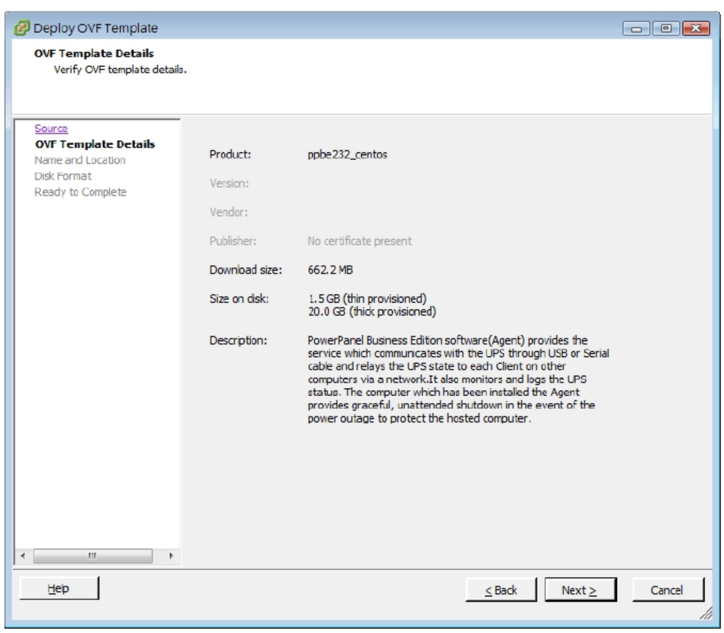
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2. CONFIGURATION 3

3. Click **Browse** to import the **ppbeXXX_centos.ovf** extracted from the downloaded zip file. Click **Next** to start the deployment task.

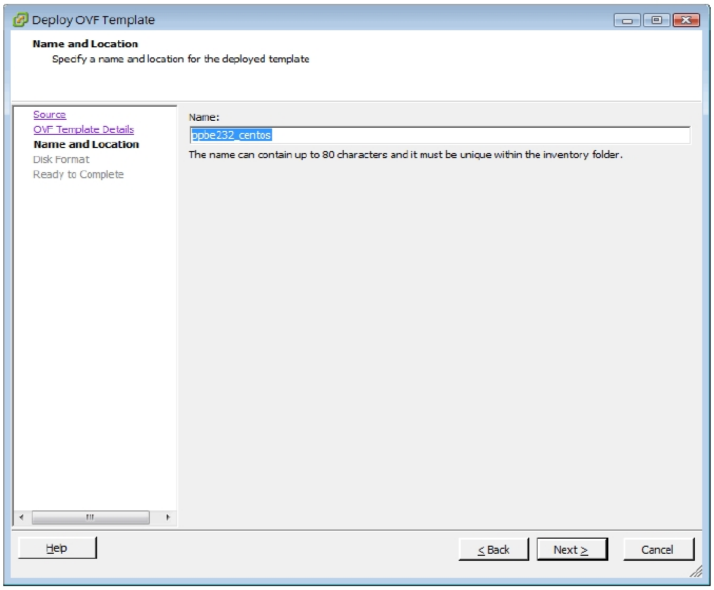


4. The OVF Template Details will be displayed. Click **Next** to continue.

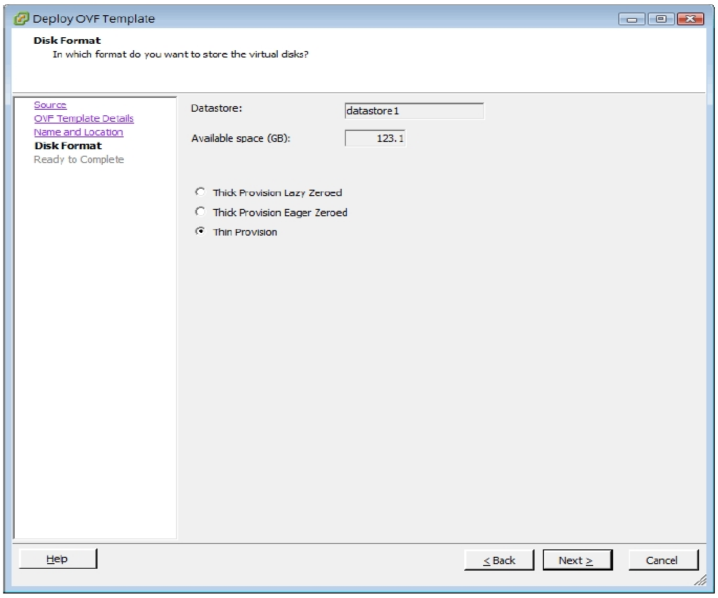


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5. Enter a name for the deployed PPBE virtual appliance. This name should be unique within the inventory. Click **Next** to continue.



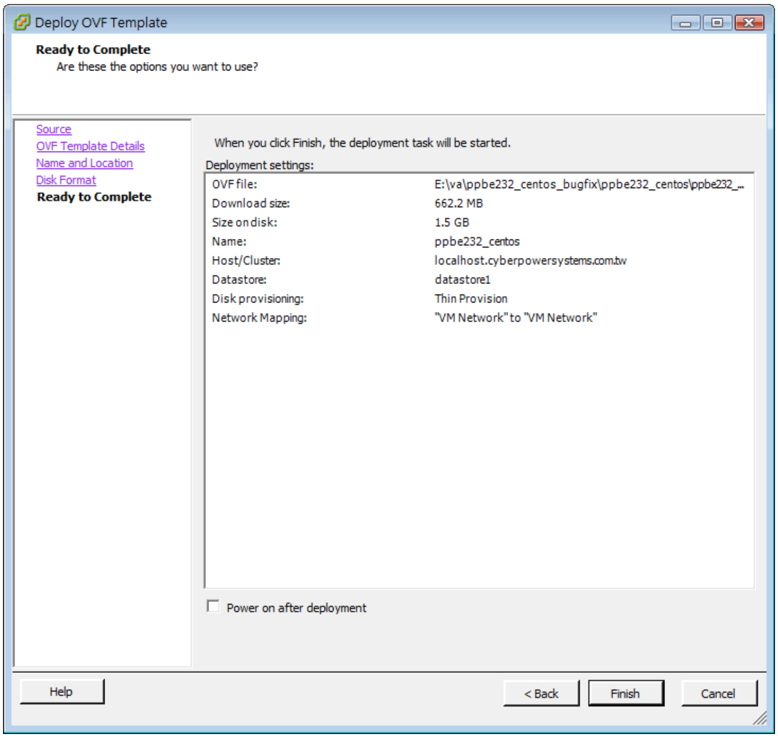
6. Select the virtual disk format for the PPBE virtual appliance. The default option is **Thin Provision**. Click **Next** to continue.



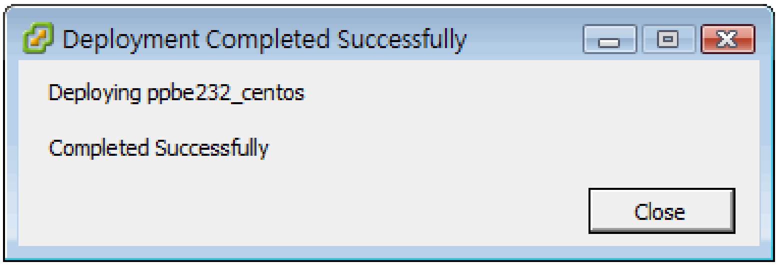
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2. CONFIGURATION 3

7. The deployment details will be displayed. Click **Finish** to start the deployment task.

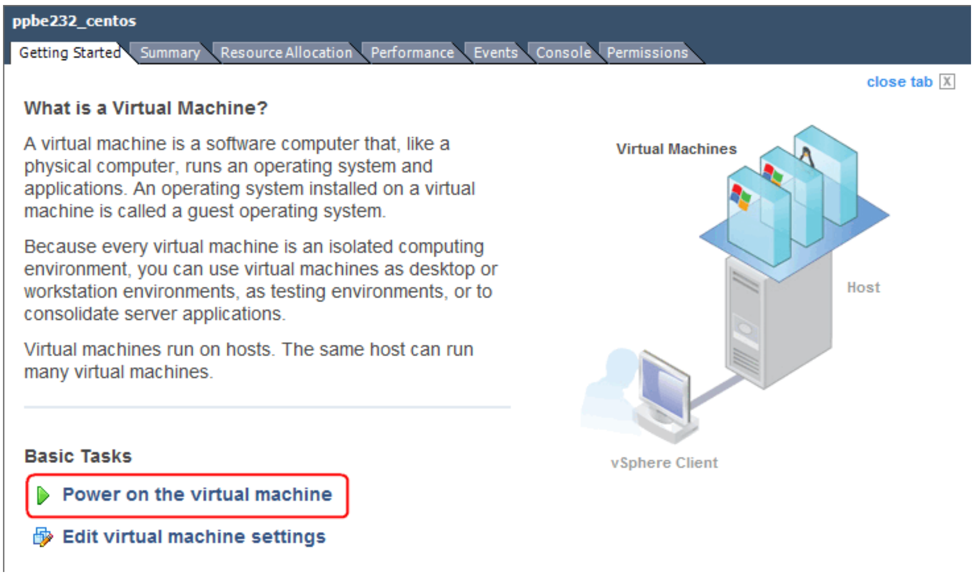


8. After the deployment task is completed, the PPBE virtual appliance will be added into the inventory.

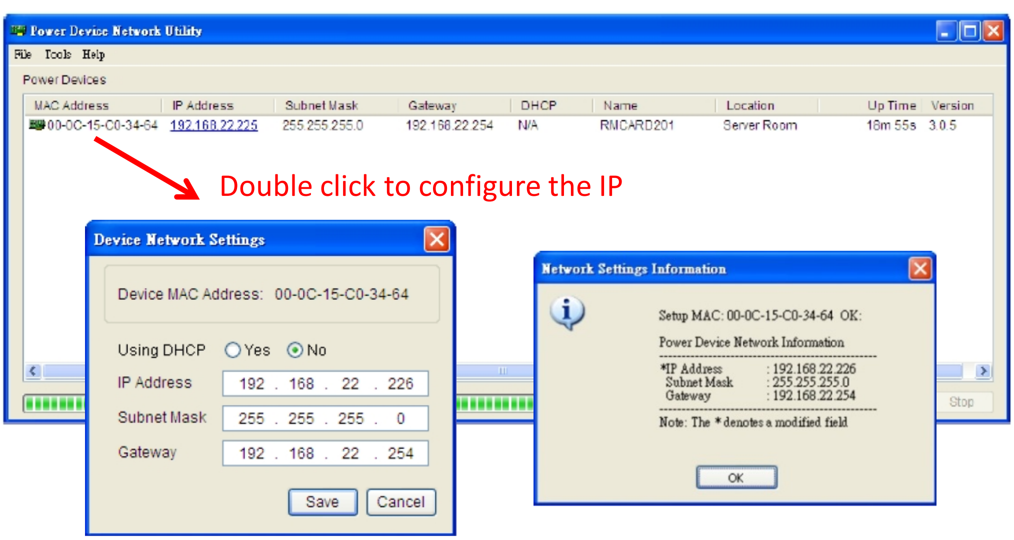


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9. Click **Power on the virtual machine** to power on the virtual machine and be ready to access the PPBE.



10. If your UPS has been installed with RMCARD, use “Power Device Network Utility” to detect the IP address of the RMCARD or change it.



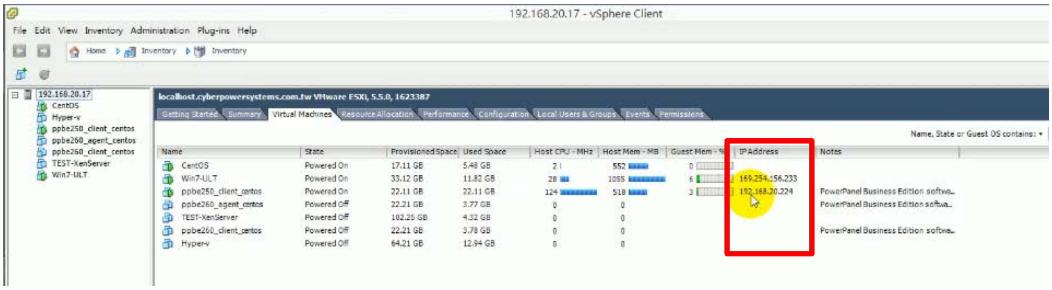
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2. CONFIGURATION 3

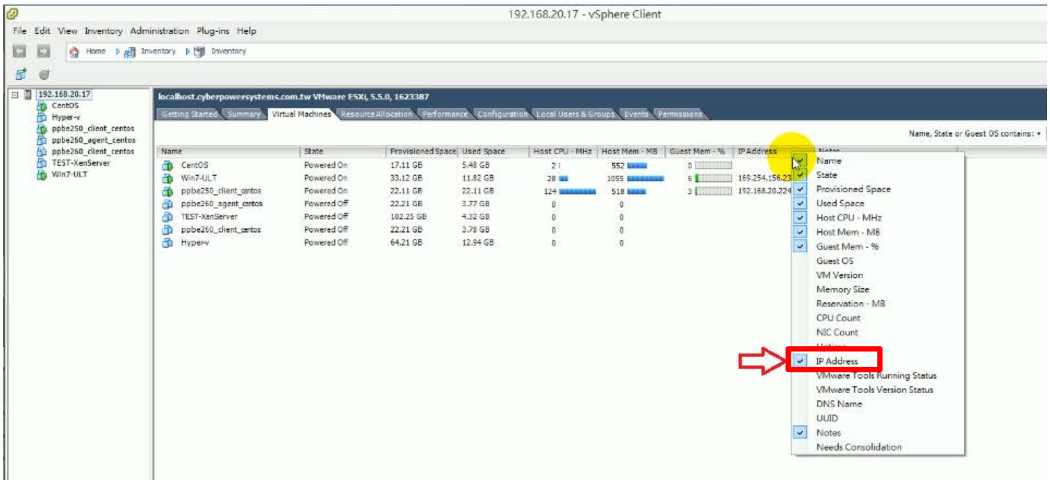
10-1. Before logging in PPBE Client, you need to find out the IP address of the PPBE virtual appliance:

(1) Login VMware vSphere Client with IP and ID/Password of host.

(2) In **Virtual Machines** tab, all VMs, along with their IP address, are displayed.



(3) If the IP address is not displayed, right click to open the pop-up menu. Check **IP Address** to display the IP address.



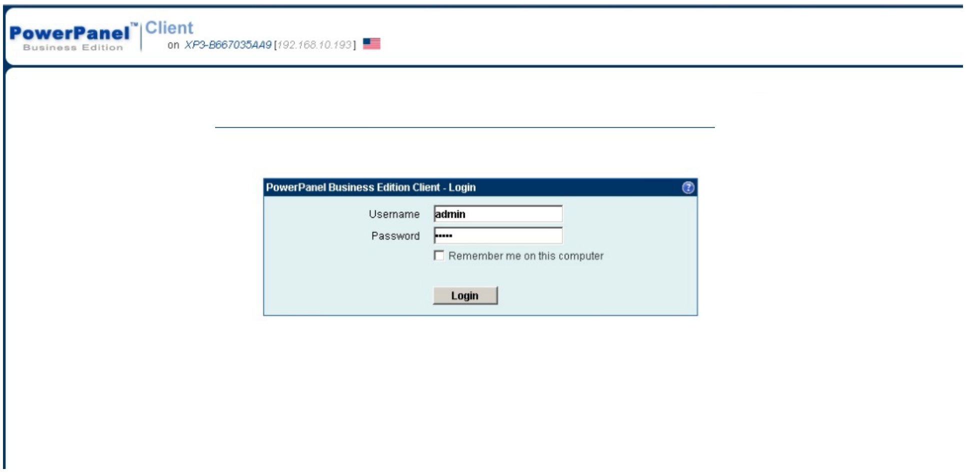
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2. CONFIGURATION 3

11. Follow below steps to complete the PPBE Client configuration.

11-1. Login to PPBE Client through web interface. Go to http://xxx.xxx.xxx.xxx:3052 where xxx.xxx.xxx.xxx is the IP address of the VA, and login with the default Username/Password: **admin**/**admin**.

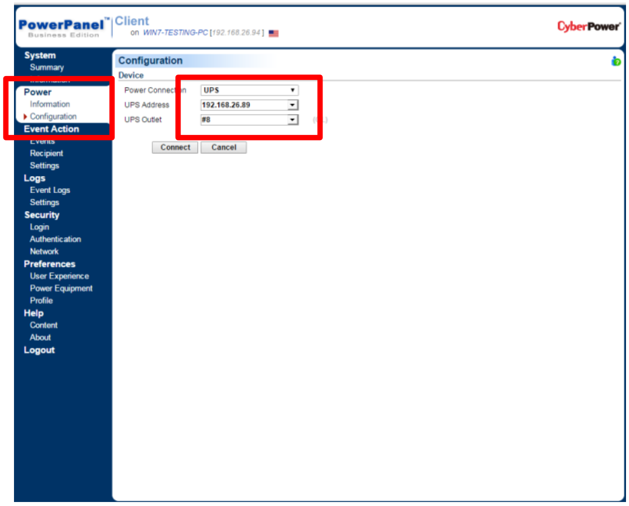
Note: *If you don't know the IP address of PPBE virtual appliance, see step 10-1.*



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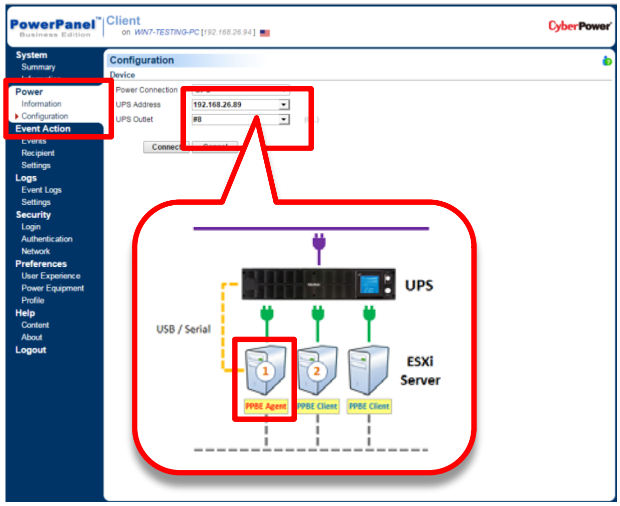
2. CONFIGURATION 3

11-2. Set the RMCARD IP (if the UPS is installed with a RMCARD) and assign the UPS outlet to which the ESXi host is connected to.



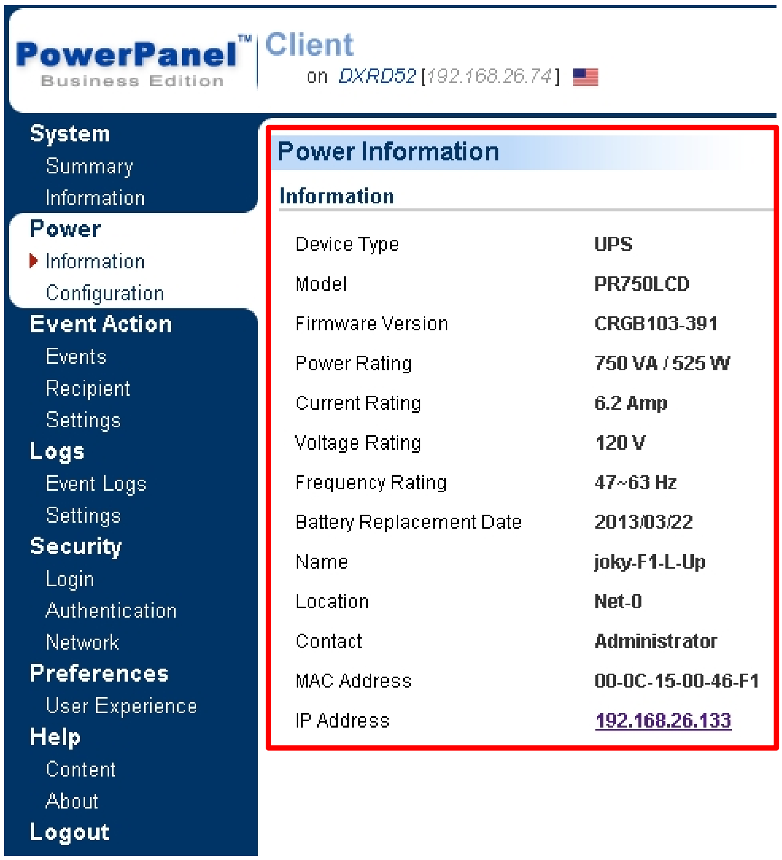
11-3. If the UPS is NOT installed with RMCARD, set the IP address of the neighbor ESXi host server which is installed with PPBE VA Agent and protected by the same UPS (see below diagram).

After assigning correct IP, assign the UPS outlet to which the ESXi host is connected to.



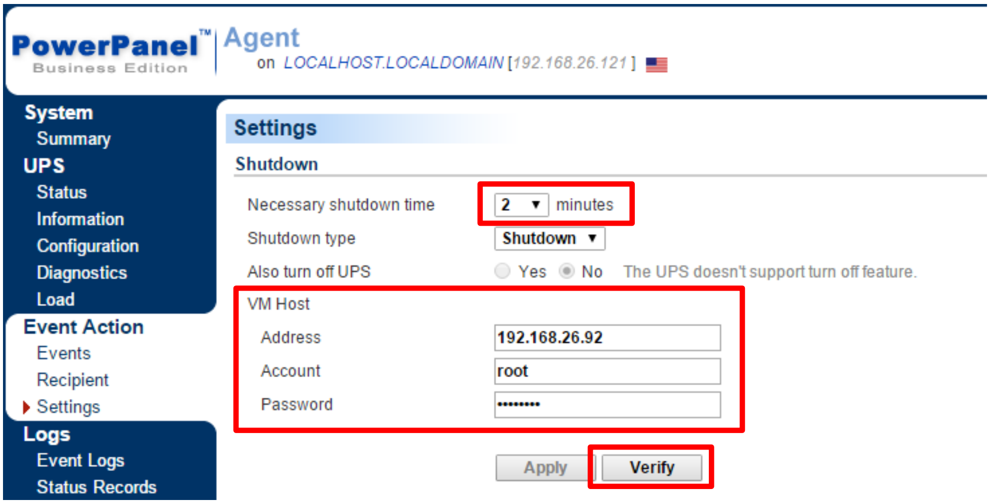
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11-4. Go to **Power → Information**. If correct IP is assigned, the corresponding UPS information will be displayed in PPBE Client.



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11-5. Go to **Event Action** → **Settings** to set necessary shutdown time for the ESXi host.



Note:

***Necessary shutdown time**: Set the shutdown time for VMware ESXi host server.*

***Address**: The IP address of the host computer.*

***Account**: The ID that you use to access host via "VMware vSphere Client".*

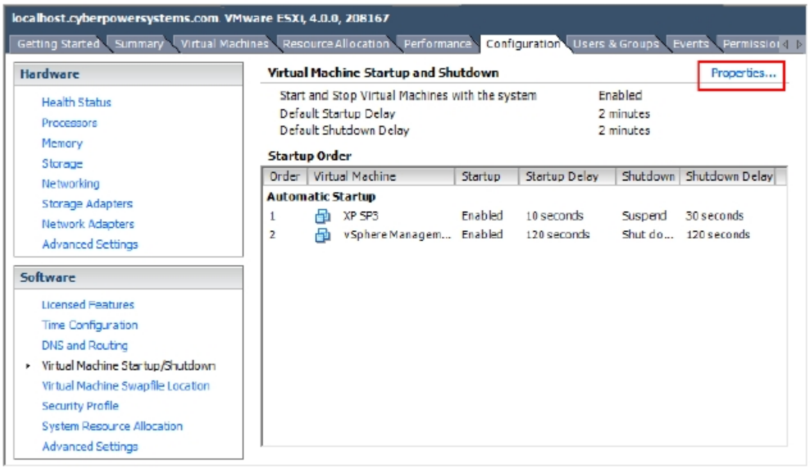
***Password**: The password that you use to access host via "VMware vSphere Client".*

*After clicking **Apply**, you can test if the ID/Password can access the host by clicking **Verify**.*

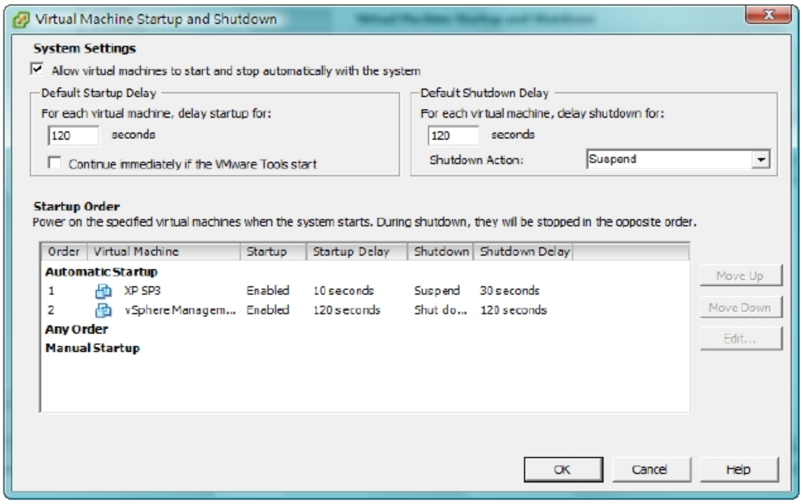
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2. CONFIGURATION 3

12. Configure Startup and Shutdown of Virtual Machines on ESX/ESXi.
In order to ensure that all virtual machines could be shut down and restart gracefully, check the "Virtual Machine Startup and Shutdown" setting through menu by going to **Configuration** → **Virtual Machine Startup and Shutdown** → **Properties**.



13. Check **Allow virtual machines to start and stop automatically with the system** to enable this option.

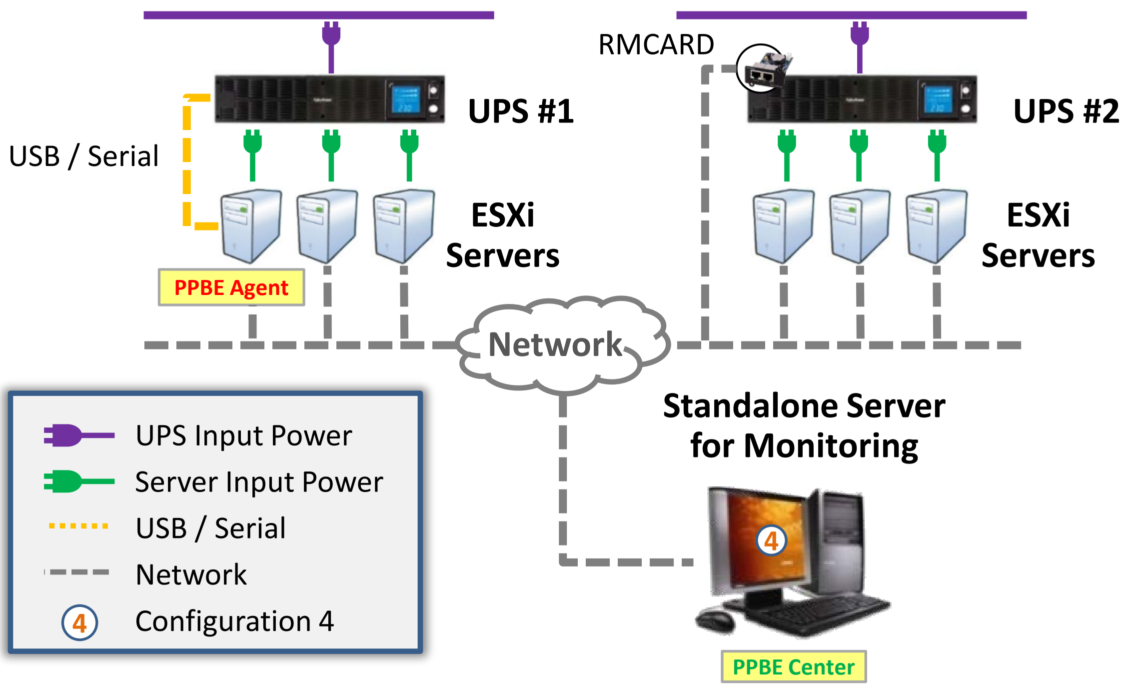


✓ **DONE!** Now you can test and see if the host can work with the UPS properly.

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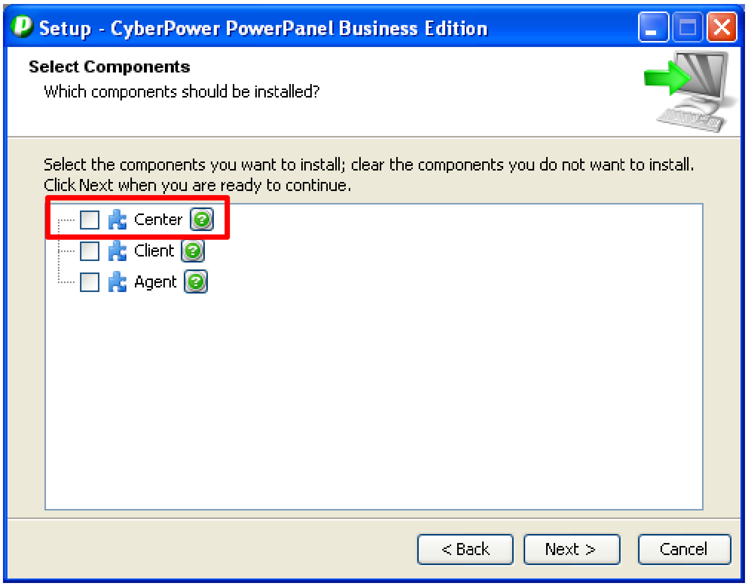
2. Configuration 4

Install PPBE Center



1. Download the latest version of **PPBE** from the official website of CyberPower. Please choose the version which can run on your standalone PC for monitoring.

2. Select **PPBE Center** to install Center version on the PC for monitoring.



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2. CONFIGURATION 4

3. Login to PPBE Center through web interface.

Go to http://xxx.xxx.xxx.xxx:3052 where xxx.xxx.xxx.xxx is the IP address of the center computer, and login with the default Username/Password: **admin/admin**.

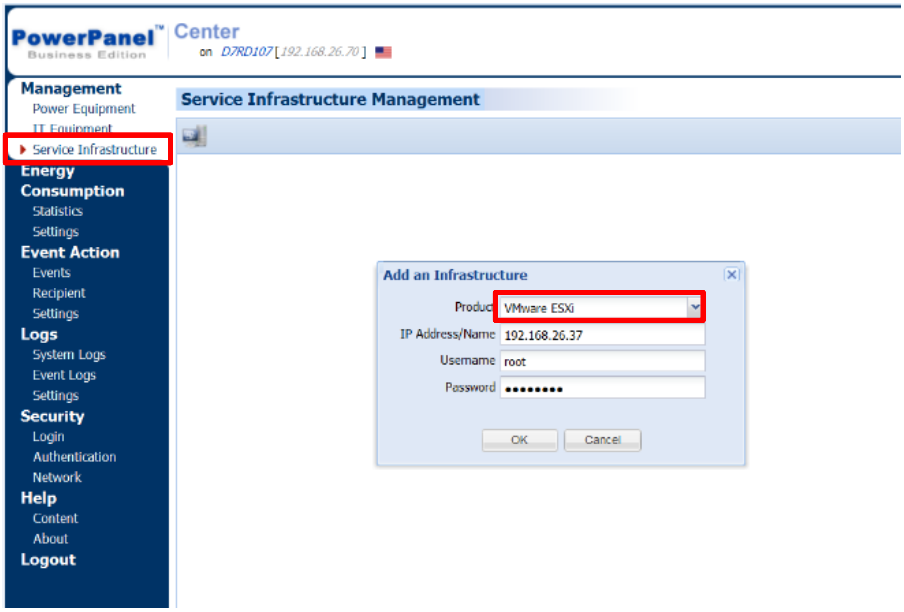


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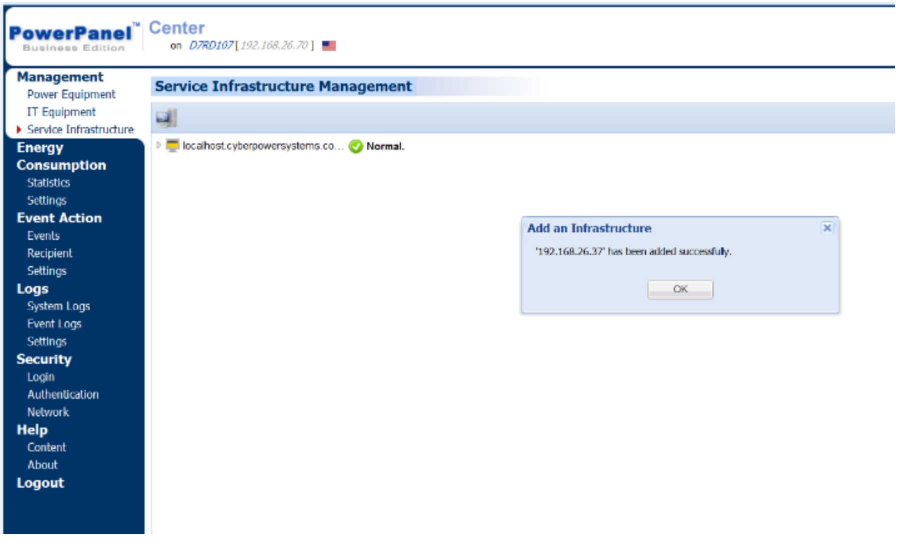
4. To add a new ESXi server in PPBE Center, right-click and select **Add an Infrastructure**.

Note: Before you add ESXi server, you must add all UPSs first on the "Power Equipment" page.

Select **VMware ESXi** from the drop-down list of **Product** item and enter related information including access username and password of the ESXi server.

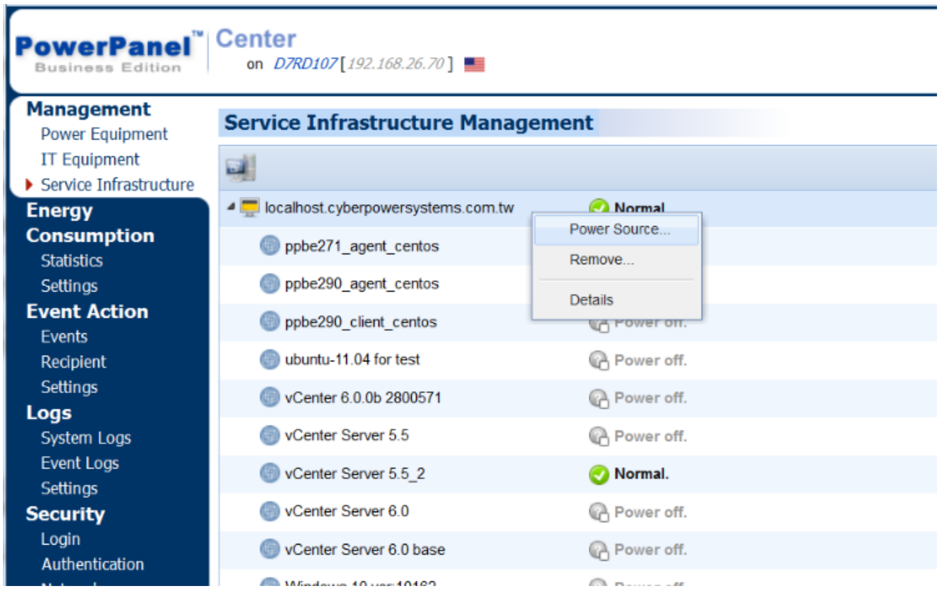


5. The icon of the new ESXi server will be displayed if the configuration is successful

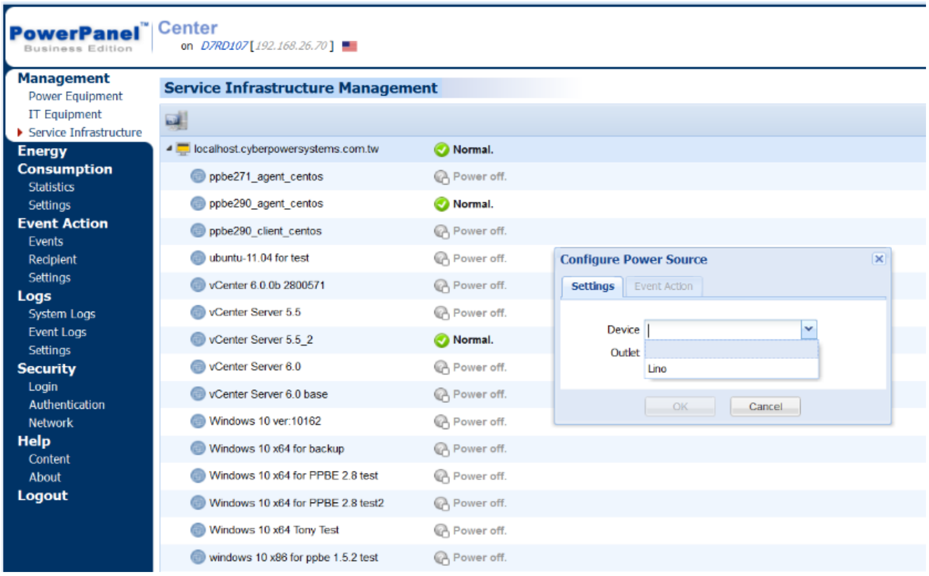


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6. To correctly set the power source (UPS) of the added ESXi servers, click the device icons (ESXi servers) and select **Power Source**.



6-1. From the drop-down list of **Device** item, select the correct UPS that provides power to the new ESXi server and assign the UPS outlet to which the ESXi server is connected to.

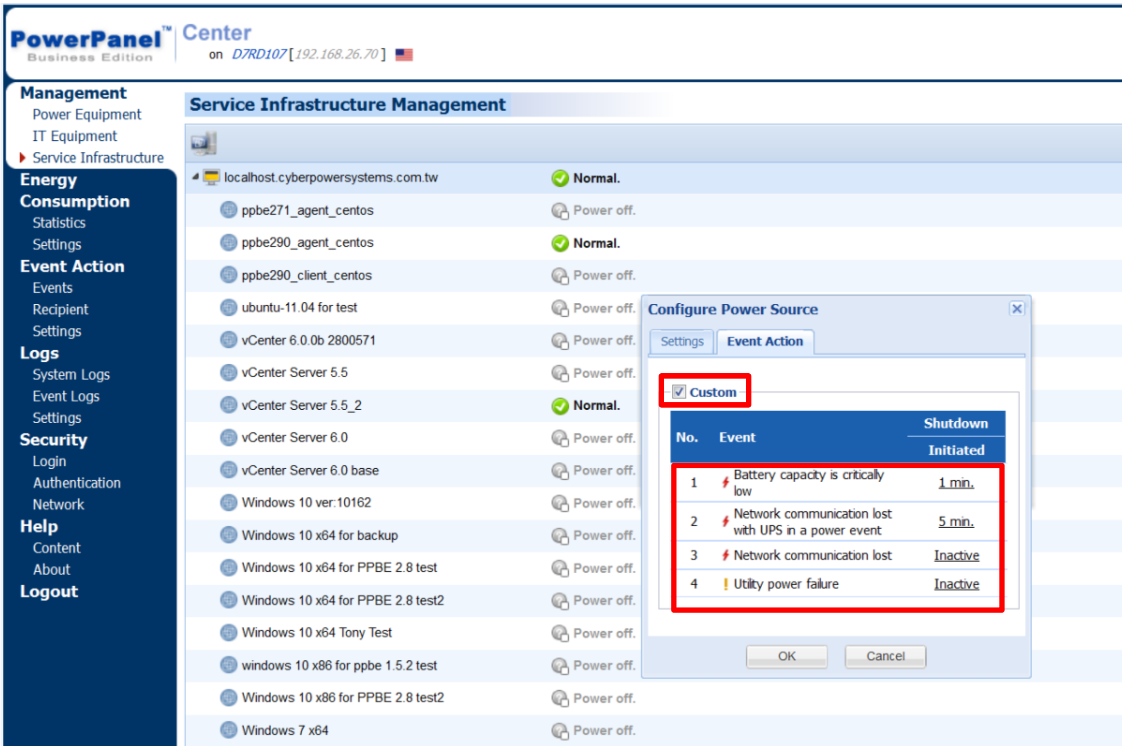


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2. CONFIGURATION 4

6-2. Click **Event Action** tab, check **Custom** and select the shutdown behavior of this ESXi server.

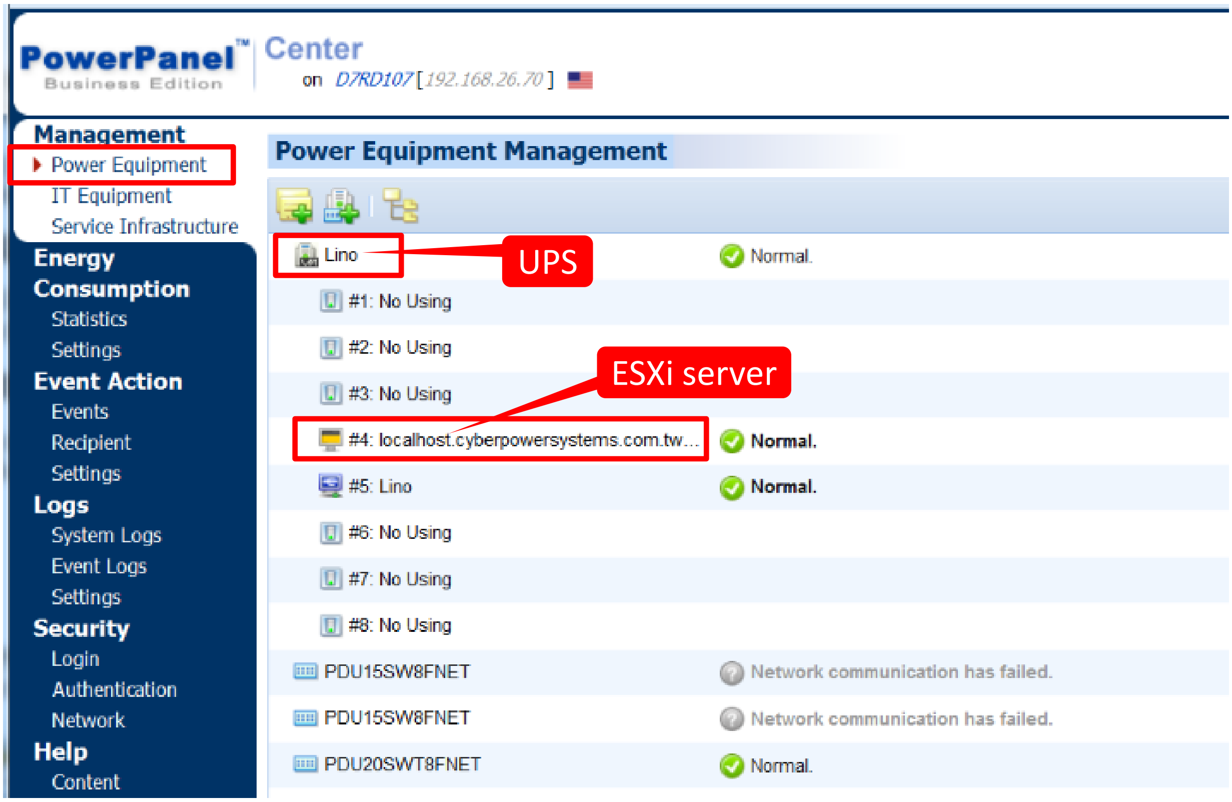
📄 ***Note:*** *If you skip this step and do not assign shutdown behavior, this ESXi server will follow the shutdown behavior assigned in the PPBE Center (refer to step 8).*



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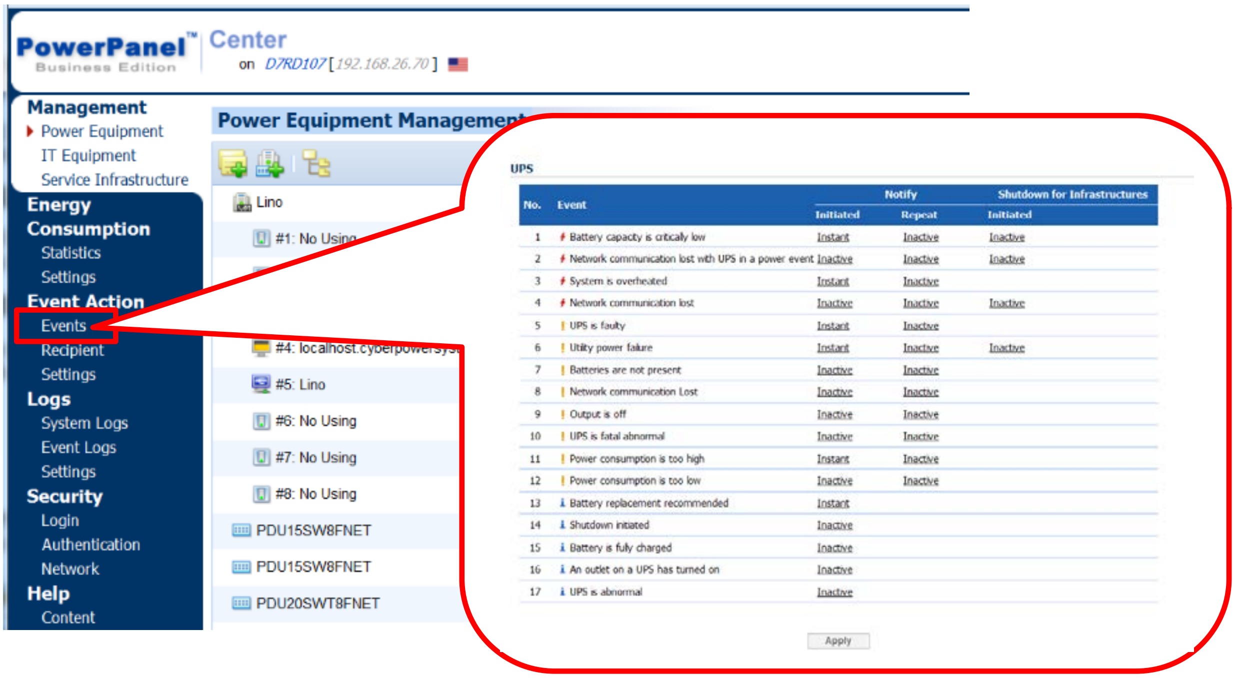
2. CONFIGURATION 4

7. If the setting is done correctly, you will see the UPS as well as the ESXi servers connected to it on the "Power Equipment" page.



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8. You can define the “Event Action” details as a graceful shutdown template. All monitored ESXi servers which are not assigned individual shutdown behavior at step 6-2 would be shutdown following this way (without having to install PPBE on each ESXi server).

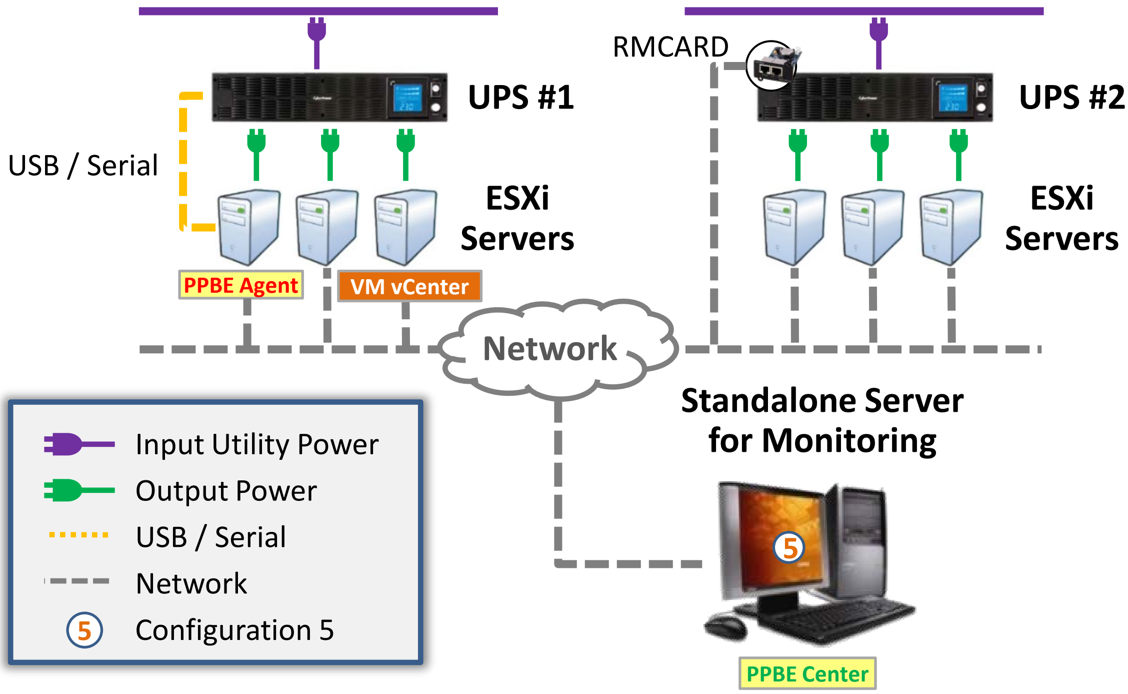


*📄 **Note:** We recommend using PPBE Center “Event Action” template for graceful shutdown of all monitored ESXi servers because it’s convenient and does not need PPBE Client installed on any ESXi server.*

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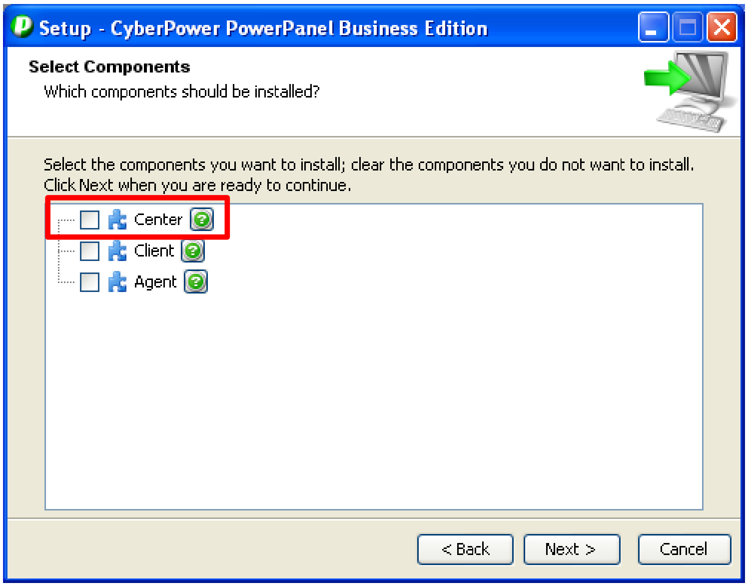
2. CONFIGURATION 5

Install PPBE Center on ESXi Server with vCenter



1. Download the latest version of **PPBE** from the official website of CyberPower. Please choose the version which can run on your standalone PC for monitoring.

2. Select **PPBE Center** to install Center version on the PC for monitoring.

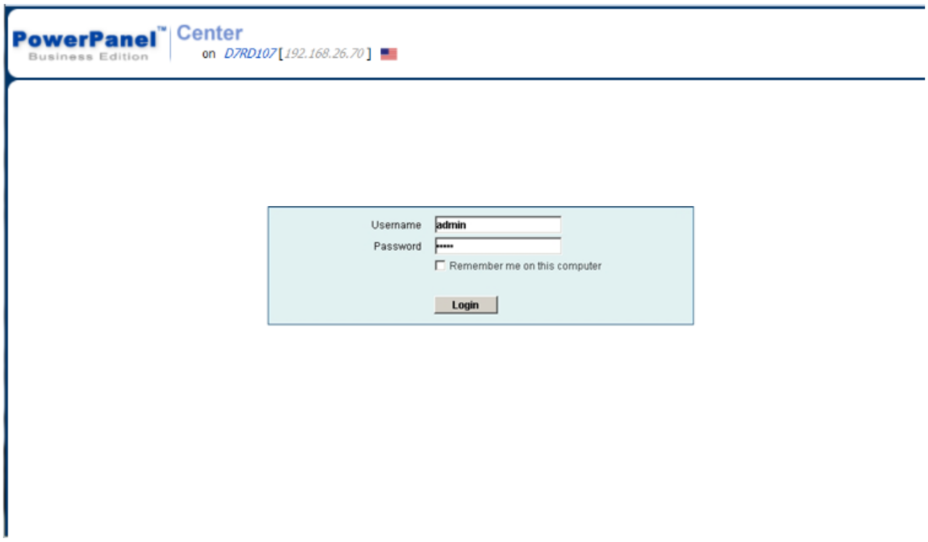


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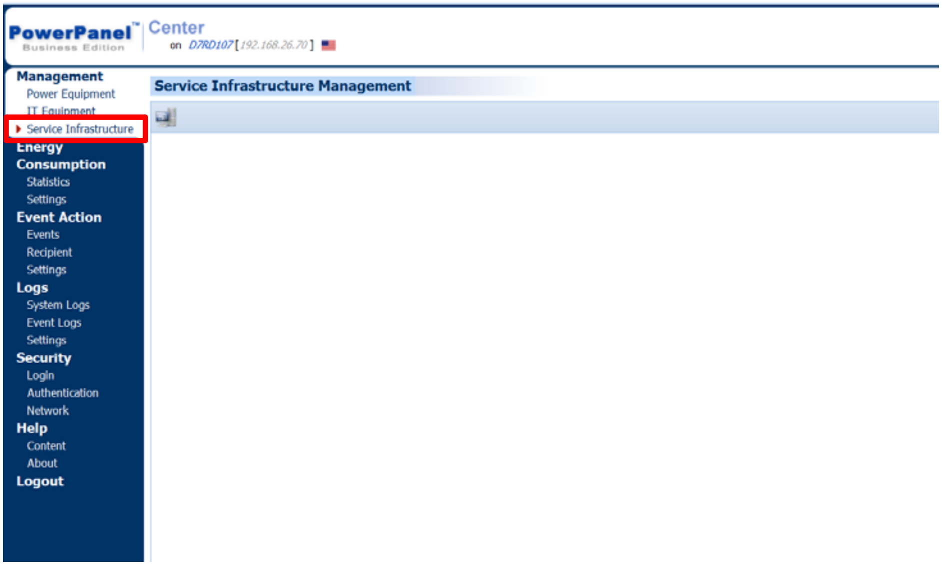
2. CONFIGURATION 5

3. Login to PPBE Center through web interface.

Go to http://xxx.xxx.xxx.xxx:3052 where xxx.xxx.xxx.xxx is the IP address of the center computer, and login with the default Username/Password: admin/admin.



4. After login, go to **Service Infrastructure** in PPBE Center and prepare to add a new server.



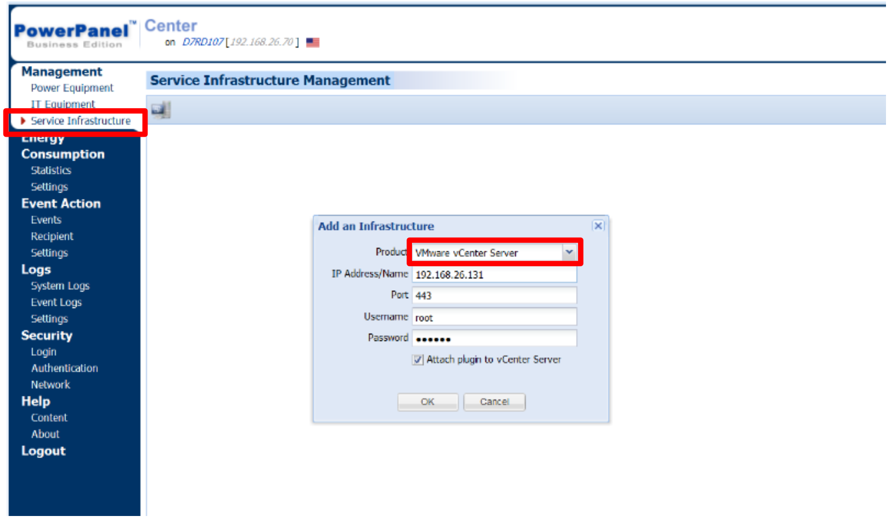
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2. Configuration 5

5. To add a new ESXi server with vCenter in PPBE Center, right-click and select **Add an Infrastructure**.

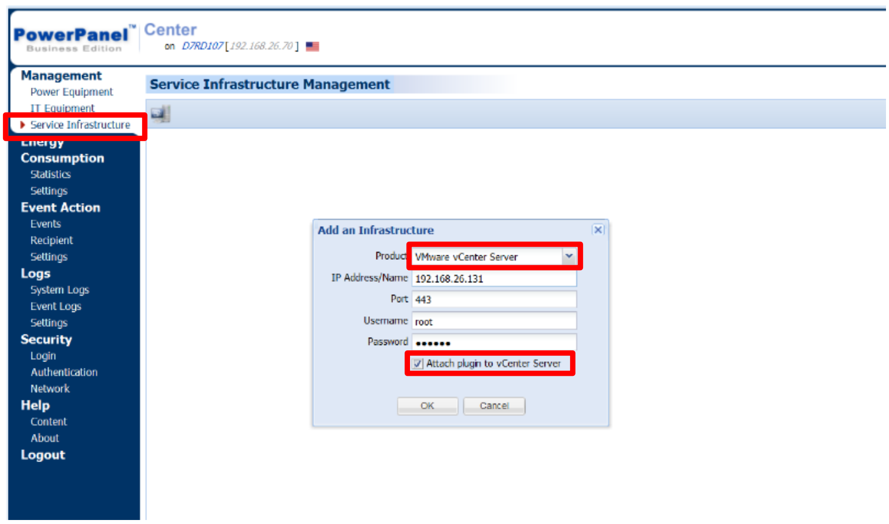
> *__Note:__ Before you add ESXi server with vCenter, you must add all UPSs first on the "Power Equipment" page.*

Select **VMware vCenter Server** from the drop-down list of **Product** item and enter related information including access username and password of the ESXi server.

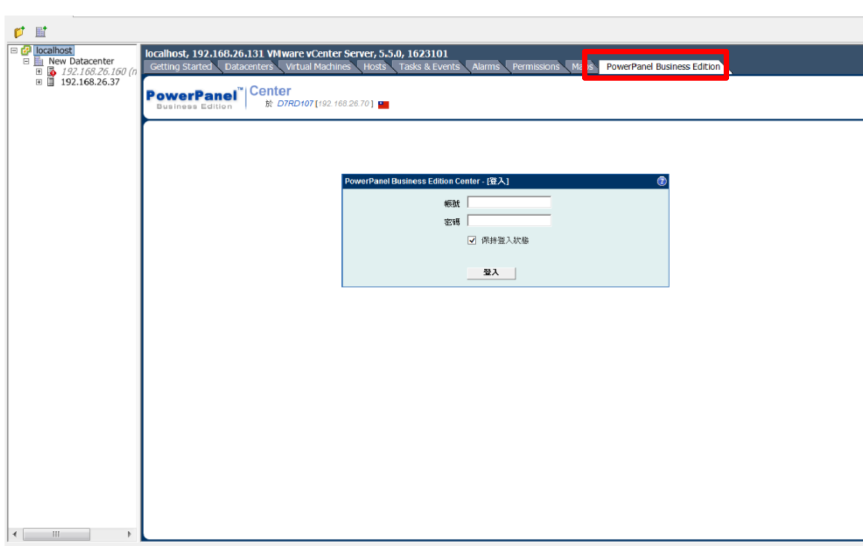


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6. We recommend leaving the "Attach plugin to vCenter Server" option checked.



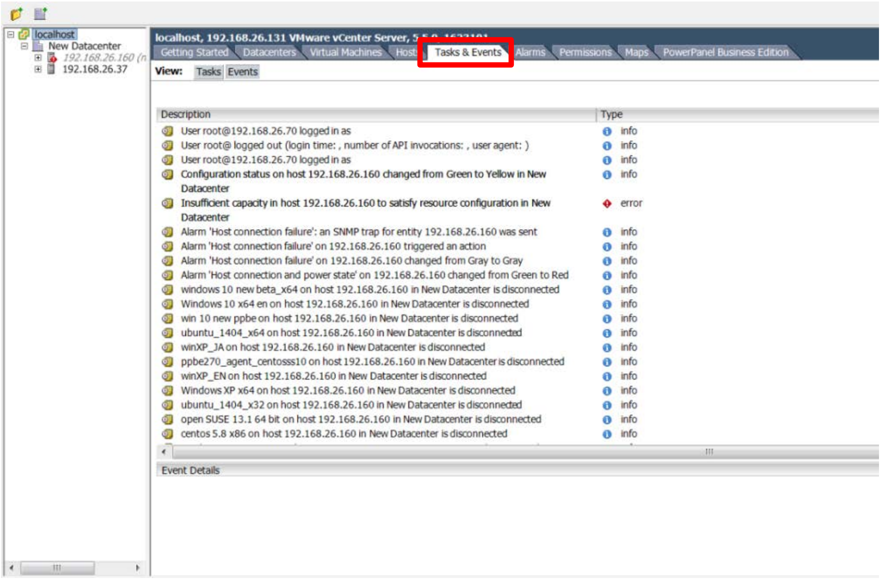
6-1. If the "Attach plugin to vCenter Server" option is checked, it will keep a PPBE Center plugin in VMware vCenter interface.



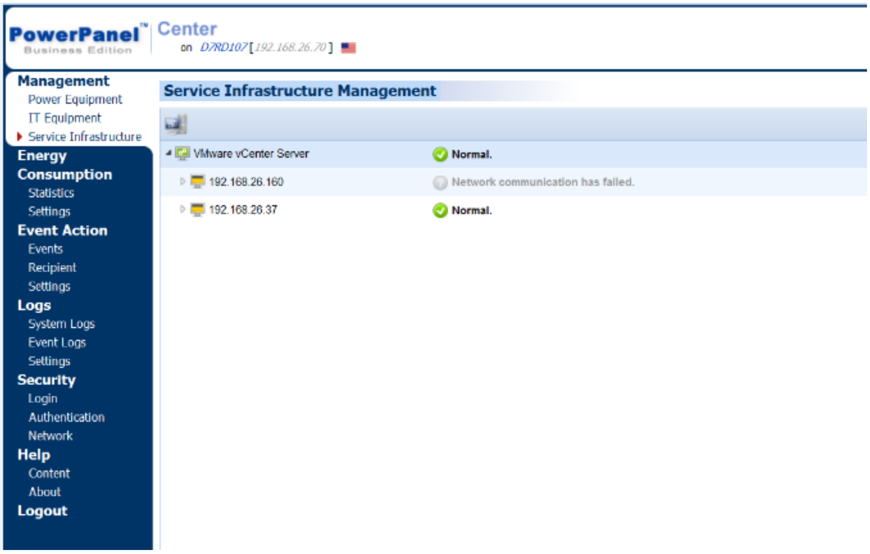
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2. CONFIGURATION 5

6-2. Whether the “Attach plugin to vCenter Server” is checked or not, PPBE Center will write its event logs to the **Tasks & Events** tab in VMware vCenter interface.

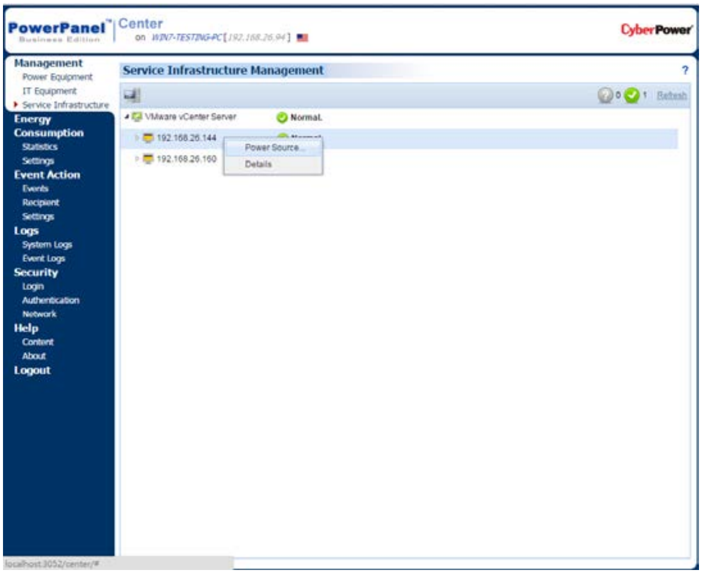


7. If the configuration is successful, the icon of the new VMware vCenter server will be displayed, as well as all ESXi servers which are currently monitored by vCenter.

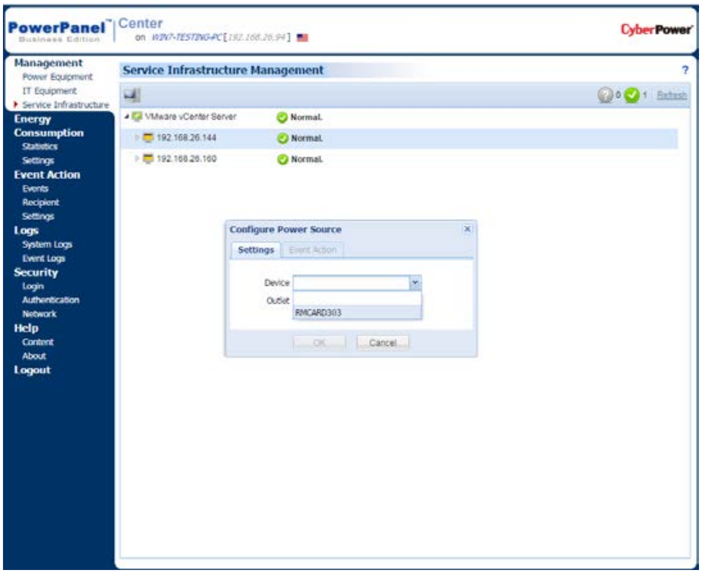


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8. To correctly set the power source (UPS) of all added ESXi servers, click the device icons (ESXi servers) and select **Power Source**.



8-1. From the drop-down list of **Device** item, select the correct UPS that provides power to the new ESXi server and assign the outlet number to which the ESXi server is connected.

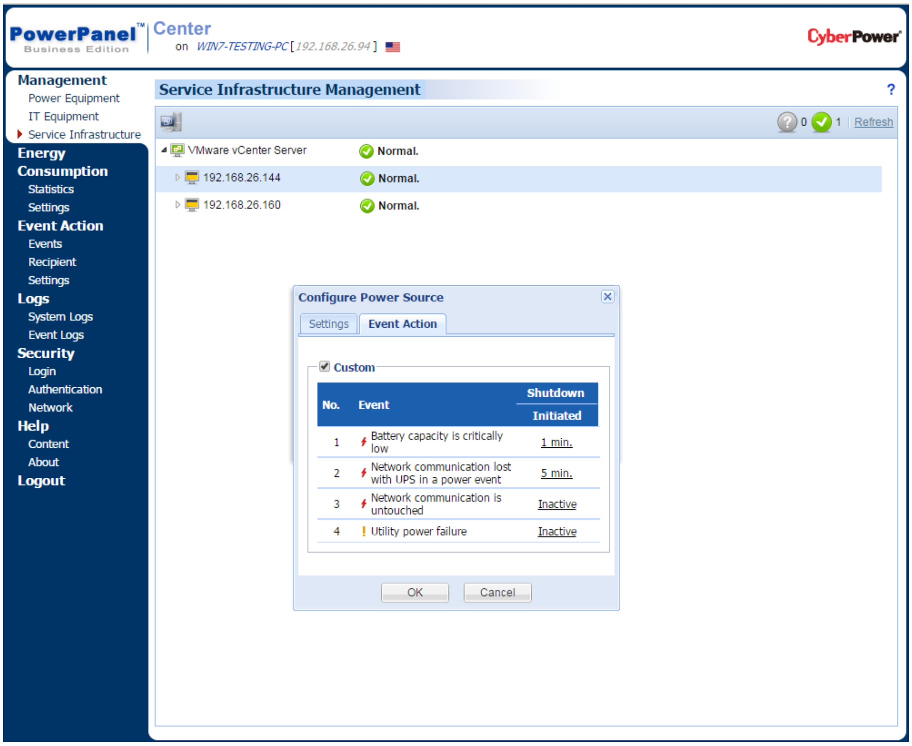


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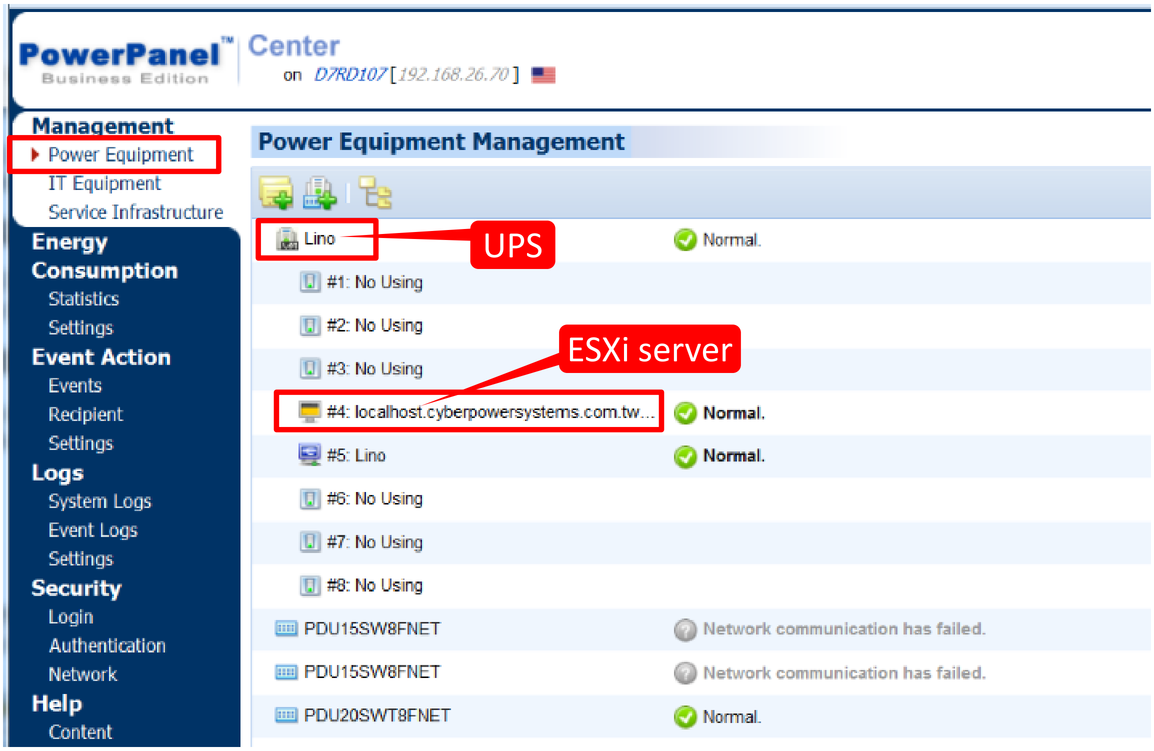
2. CONFIGURATION 5

8-2. Click **Event Action** tab, check **Custom** and select the shutdown behavior of this ESXi server.

🗎 ***Note:*** *If you skip this step and do not assign shutdown behavior, this ESXi server will follow the shutdown behavior assigned in the PPBE Center (refer to step 10).*

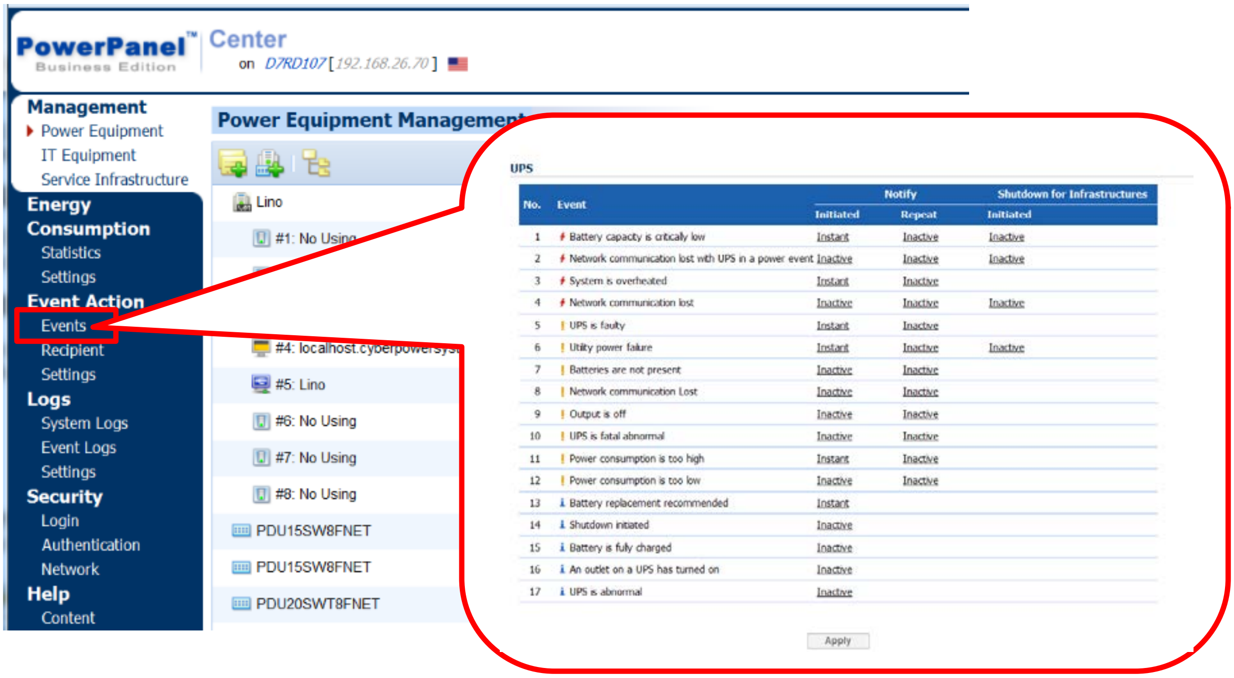


9. If the setting is done correctly, you will see the UPS as well as the ESXi servers connected to it on the "Power Equipment" page.



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10. You can define the “Event Action” details as a graceful shutdown template. All monitored ESXi servers which are not assigned individual shutdown behavior at step 8-2 would be shutdown following this way (without having to install PPBE on each ESXi server).



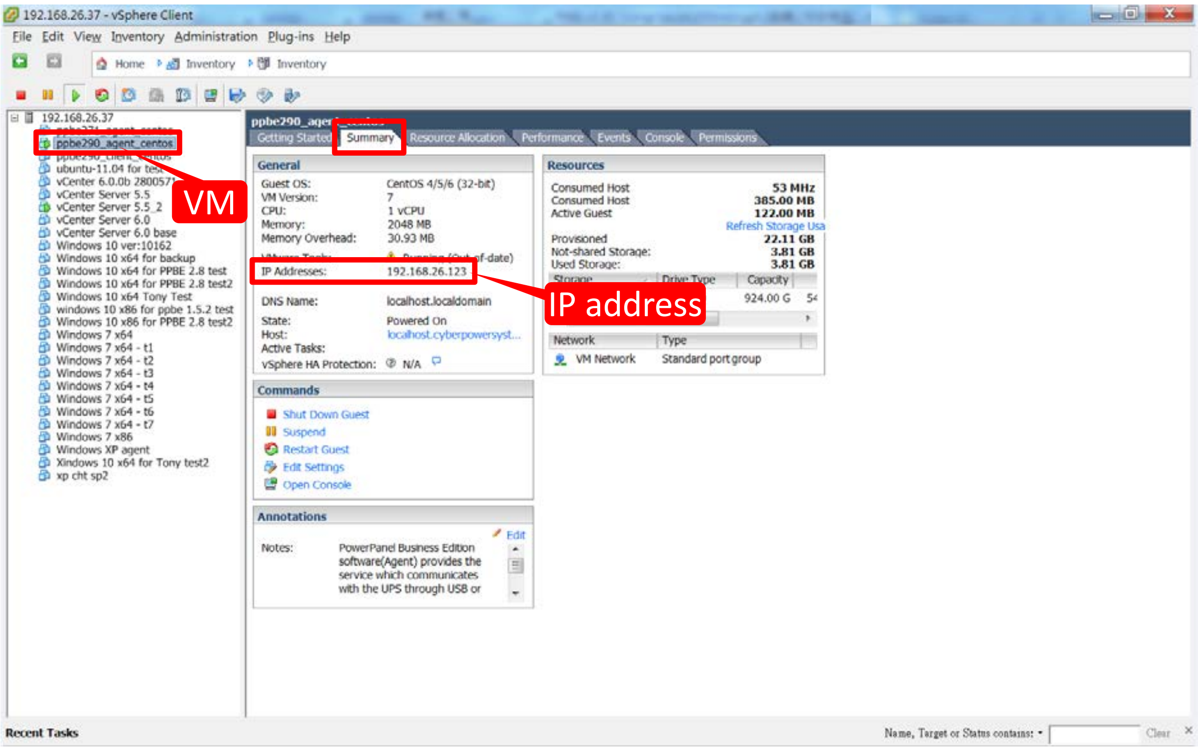
Note: *We recommend using PPBE Center “Event Action” template for graceful shutdown of all monitored ESXi servers because it’s convenient and does not need PPBE Client installed on any ESXi server.*

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3. APPENDIX

How to Find VM's IP address?

You can find the VM's IP address in vSphere Client interface: **Summary** → **General** → **IP Addresses**.



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